

Replacement Prospectus and Statement of Additional Information

for Vanguard All-World ex-US Shares Index ETF (VEU)

1 May 2023

Vanguard Investments Australia Ltd announces the following:

ETF	ASX CODE	DATE	ANNOUNCEMENT
Vanguard All-World ex-US Shares Index ETF	VEU	1 May 2023	Lodgement of Australian Replacement Prospectus with ASIC

Vanguard Investments Australia Ltd has lodged an Australian Replacement Prospectus dated 1 May 2023 for the Vanguard All-World ex-US Shares Index ETF with the Australian Securities and Investments Commission (ASIC), a copy of which is attached.

The Risks section of the Prospectus was updated to reflect the US Prospectus and Statement of Additional Information for the Vanguard FTSE All-world ex-US ETF (NYSE: VEU).

On 27 February 2023, the Vanguard Group, Inc. in the US filed an updated Prospectus and Statement of Additional Information (SAI) with the US Securities and Exchange Commission (SEC) for the Vanguard FTSE All-World ex-US ETF shares which are listed on the New York Stock Exchange (VEU:NYSE Arca), copies of which are attached. These documents are incorporated by reference in the Australian Prospectus for the Vanguard All-World ex-US Shares Index ETF (VEU:ASX) and copies of these documents have been lodged with ASIC.

The Australian Prospectus should be read in conjunction with the US Prospectus (for Vanguard FTSE All-World ex-US ETF) and SAI (for the Vanguard International Equity Index Funds).

Further Information

If you have any queries on Vanguard ETFs, please visit vanguard.com.au

Vanguard Investments Australia Ltd (ABN 72 072 881 086 / AFS Licence 227263) (Vanguard) is the issuer of the Prospectus on behalf of the US listed ETFs described in the Prospectus. Vanguard has arranged for the interests in the US ETFs to be made available to Australian investors via CHES Depository Interests (CDIs) that are quoted on the AQUA market of the ASX. Vanguard ETFs will only be issued to Authorised Participants - that is persons who have entered into an Authorised Participant agreement with Vanguard. Retail investors can transact in Vanguard ETFs through Vanguard Personal Investor, a stockbroker or financial adviser on the secondary market. Investors should consider the Prospectus in deciding whether to acquire Vanguard ETFs. Retail investors can only use the Prospectus for informational purposes. A copy of the Target Market Determinations (TMD) for Vanguard's financial products can be obtained at vanguard.com.au free of charge and include a description of who the financial product is appropriate for. You should refer to the TMD of this Fund before making any investment decisions. You can access our disclosure documents at vanguard.com.au or by calling 1300 655 101.

The Vanguard All-World ex-US Shares Index ETF (the "Product") has been developed solely by Vanguard. The "Product" is not in any way connected to or sponsored, endorsed, sold or promoted by the London Stock Exchange Group plc and its group undertakings (collectively, the "LSE Group"). FTSE Russell is a trading name of certain LSE Group companies. All rights in the FTSE All-World ex US Index (the "Index") vest in the relevant LSE Group company which owns the Index e.g., "FTSE®" "Russell®", "FTSE Russell®", are a trade mark(s) of the relevant LSE Group company and are used by any other LSE Group company under license. The Index is calculated by or on behalf of FTSE International Limited or its affiliate, agent or partner. The LSE Group does not accept any liability whatsoever to any person arising out of (a) the use of, reliance on or any error in the Index or (b) investment in or operation of the Product. The LSE Group makes no claim, prediction, warranty or representation either as to the results to be obtained from the Product or the suitability of the Index for the purpose to which it is being put by Vanguard.

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Replacement Prospectus 01 May 2023

Vanguard All-World ex-US Shares Index ETF

ASX code: VEU

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Important notice

This replacement Prospectus is dated 01 May 2023. This Prospectus replaces the original Prospectus dated 28 February 2023.

Trading Participants

Please note that the offer in this Prospectus is for stockbrokers acting as principal, that is persons who have been authorised as 'trading participants' under the ASX Operating Rules (Eligible Investor). For that reason, certain sections of this Prospectus (particularly those relating to purchases and redemptions of the Vanguard All-World ex-US Shares Index ETF) are of direct relevance to such persons only.

All other investors

Other investors cannot invest through this Prospectus directly, but can transact in the Vanguard All-World ex-US Shares Index ETF through a stockbroker or financial adviser. Other investors can use this Prospectus for informational purposes only. For further details on Vanguard Exchange Traded Funds (ETFs) please contact a stockbroker or financial adviser or visit www.vanguard.com.au.

This Prospectus does not constitute an offer or invitation in any jurisdiction other than in Australia. For the avoidance of doubt, Vanguard All-World ex-US Shares Index ETF securities are not intended to be sold to US Persons as defined under Regulation S of the US federal securities laws.

Vanguard ETF Capital Markets Team

10:00 am to 5:00 pm (AET)
Monday to Friday
Telephone: 1300 655 888
Facsimile: 1300 765 712
E-mail: etf@vanguard.com.au

ASX enquiries

Telephone 131 279 (within Australia)
Telephone +61 2 9338 0000 (outside Australia)

Registered office

Level 13
130 Lonsdale Street
Melbourne Vic 3000

Postal address

GPO Box 3006
Melbourne Vic 3001

Website

www.vanguard.com.au

Features at a glance

Full name	Vanguard All-World ex-US Shares Index ETF
ASX code	VEU
SEDOL	B42HLZ8
ISIN	AU000000VEU9
Management Costs ¹	0.08% p.a.
Structure	CDI : CHESS Depositary Interest
Objective	Track the performance of the benchmark Index
Index	FTSE All-World ex US Index
Listing location	AQUA market of the ASX
Commencement date	8 May 2009
Prospectus date	01 May 2023
Expiry date	28 March 2024
AQUA product issuer	Vanguard Investments Australia Ltd
Fund manager	The Vanguard Group, Inc.
Share registry	Computershare Investor Services Pty Limited
Holder of underlying ETFs	CHESS Depositary Nominees Pty Limited
Risks	Including but not limited to market; country/regional; emerging markets; currency; regulatory and tax; trading and liquidity; cybersecurity; index replicating.
Transactions (primary market)	Via an Authorised Participant in the US
Creation unit ²	Please refer to the latest Statement of Additional Information (SAI)
Transaction fee ³	Please refer to the latest SAI
Transactions (secondary market) ⁴	Available on the ASX; required to have a brokerage account.
Distribution	Quarterly: March, June, September and December
Distribution payable	Australian dollars, within 20 business days following the record date
Distribution reinvestment plan	Not available
Taxation	Capital gains or ordinary income, foreign sourced income, and US withholding and US estate tax may be applicable depending on the circumstance of the investor.
Regulated Investment Company status	Qualifies as at the date of this Prospectus
Documents incorporated by reference	US Prospectus and SAI (and documents that update the US Prospectus and SAI, as lodged with ASIC from time to time).
Key contact	Vanguard ETF Capital Markets Team on 1300 655 888

¹ Refer to the section 'Fees and expenses'.

² US ETF Securities are issued and redeemed in large blocks known as creation units to Authorised Participants only. Refer to section '3. How to transact with Vanguard'.

³ This amount is only paid by Authorised Participants purchasing or redeeming US ETF Securities. Individual investors do not pay this amount for sales or purchases through their broker.

⁴ Investors buying or selling CDIs on the ASX may incur brokerage fees, commissions and a bid/ask spread (being the difference between the price at which participants are willing to buy and sell CDIs on the ASX).

Disclaimers

An investment in the Vanguard All-World ex-US Shares Index ETF is subject to risk, (refer to the section 2. Risks”), which may include possible delays in repayment and loss of income and capital invested.

None of VGI, including Vanguard or their related entities, directors or officers, gives any guarantee or assurance as to the performance of, or the repayment of capital or income reinvested, in the Vanguard All-World ex-US Shares Index ETF described in this Prospectus. VGI, its related entities and associates may invest in, lend to or provide other services to the Vanguard All-World ex-US Shares Index ETF.

This Prospectus is prepared for general information only. It is not intended to be a recommendation by Vanguard, any of Vanguard’s associates or any other person to invest in the Vanguard All-World ex-US Shares Index ETF. In preparing this Prospectus, Vanguard did not take into account the investment objectives, financial situation or needs of any particular person. Before making an investment decision, investors need to consider (with or without the advice or assistance of an adviser) whether an investment in the Vanguard All-World ex-US Shares Index ETF is appropriate to their objectives, financial situation and needs.

Vanguard has sufficient working capital to enable it to operate the Vanguard All-World ex-US Shares Index ETF as outlined in this Prospectus.

About this Prospectus

This replacement Prospectus for Vanguard All-World ex-US Shares Index ETF is dated 01 May 2023. This Prospectus replaces the original Prospectus dated 28 February 2023

Vanguard Investments Australia Ltd ABN 72 072 881 086 AFSL 227263 (Vanguard) is the issuer of this Prospectus on behalf of the Vanguard FTSE All-World ex-US Index Fund (US Fund), a series of Vanguard International Equity Index Funds (a Delaware Statutory Trust).

The Vanguard Group, Inc. (VGI) is the US parent company of Vanguard.

In this Prospectus references to 'Vanguard', 'we', 'our' and 'us' refer to Vanguard Investments Australia Ltd.

A copy of this Prospectus has been lodged with the Australian Securities and Investments Commission (ASIC) in accordance with section 718 of the *Corporations Act 2001 (Cth)* (Corporations Act) and with the ASX Limited (ASX). Neither ASIC nor the ASX takes any responsibility for the contents of this Prospectus.

The Vanguard All-World ex-US Shares Index ETF is the name given to the Clearing House Electronic Subregister System (CHES) Depository Interests (CDIs) that are quoted on the AQUA market of the ASX (refer to page 9 for further details on CDIs). These CDIs facilitate the buying and selling of exchange traded shares in the US Fund (US ETF Securities) on the ASX. CDIs are 'securities' for the purpose of the *Corporations Act*.

Unless otherwise stated, data sources used within this prospectus by Vanguard or VGI are public or licensed market data and all material is current as at the date of this Prospectus.

A copy of this Prospectus for the Vanguard All-World ex-US Shares Index ETF, the prospectus for the US ETF Securities (US Prospectus) and the US Fund's Statement of Additional Information (SAI) are available on Vanguard's website. If you do not have access to the internet, please contact Vanguard ETF Capital Markets Team on 1300 655 888. A paper copy will be provided free of charge on request.

Information available from Vanguard

To keep investors informed, Vanguard, in its capacity as the AQUA product issuer of the Vanguard All-World ex-US Shares Index ETF, will provide regular reporting and disclosure through the ASX Market Announcements Platform (MAP) and Vanguard's website. The following information can be obtained by visiting Vanguard's website or by contacting the Vanguard ETF Capital Markets Team on 1300 655 888:

- details of the Net Asset Value (NAV) for the ETF – available monthly
- details of the NAV price per unit for the ETF – available daily
- pricing basket – available daily
- a copy of this Prospectus (and any documents which may amend or update the Prospectus)
- details of any continuous disclosure notices given by Vanguard to the ASX and/or ASIC
- details of distribution announcements given by Vanguard to the ASX
- annual and half yearly Reports and Financial Statements for the US Fund
- total number of ETF securities on issue – monthly to the ASX via MAP

1. Key features of the ETF offer

Offer to Eligible Investors

Through this Prospectus, Vanguard gives Eligible Investors the opportunity to convert US ETF Securities into CDIs to allow trading of interests in the US ETF Securities on the secondary market in Australia. Eligible Investors, as referred to in this Prospectus, cannot directly purchase or redeem US ETF Securities with the US Fund. Only institutions that are Authorised Participants in the US can purchase or redeem US ETF Securities. Therefore, Eligible Investors will be required to engage counterparts in the US that are Authorised Participants for the purchase and redemption of US ETF Securities (refer to page 11 for more details on the purchase and redemption process).

Continuous offer and expiry date

The offer of CDIs is a continuous offer which remains open until 28 March 2024 (the Expiry Date) being 13 months after the date of this Prospectus. CDIs will not be offered, issued or transferred on the basis of this Prospectus after 28 March 2024.

The ETF offered in this Prospectus is:

ETF name	Investment objective	Underlying Index	Management costs*
Vanguard All-World ex-US Shares Index ETF ASX code: VEU	Seeks to track the performance of a benchmark index that measures the investment return of stocks of companies located in developed and emerging markets outside of the United States.	The FTSE All-World ex US Index is a float-adjusted, market-capitalisation-weighted index designed to measure equity market performance of international markets, excluding the United States. As of 31 October 2022, the index includes approximately 3,566 stocks of companies located in approximately 48 markets, including both developed and emerging markets.	0.08% p. a.

* Refer to the section 'Fees and expenses'.

The Vanguard All-World ex-US Shares Index ETF referred to in the above table is the name given to the CDIs that are quoted on the AQUA market of the ASX (refer to page 9 for further details on CDIs). CDIs facilitate the buying and selling of US ETF Securities issued by the US Fund. The US ETF Securities are listed on NYSE Arca (a subsidiary of NYSE Euronext).

The information in the table above is referenced from the US Prospectus for the US ETF Securities. For further information regarding the investment objectives, cash and liquidity management, securities lending, environmental, social and ethical considerations and the fees and expenses, please refer to the US Prospectus.

Performance

Monthly performance information for the ETF and historical performance relative to the Index will be published on Vanguard's website at www.vanguard.com.au. Neither the return of capital nor the performance of the ETF is guaranteed. Past performance is not a reliable indicator of future performance.

Fees and expenses

The following table sets out the fees and expenses of the US ETF Securities at the date of this Prospectus:

Vanguard ETF	Vanguard All-World ex-US Shares Index ETF
US ETF Security	Vanguard FTSE All-World ex-US ETF
Management fees	0.05%
Distribution fee	None
Other expenses	0.03%
Total annual fund operating expenses* (Management Costs)	0.08%

* Management Costs are deducted from the assets of the US Fund

Management Costs are expressed as a percentage of the US ETF Securities' average net assets during the relevant period. Management Costs include management expenses, such as advisory fees, account maintenance, reporting, accounting, legal, and other administrative expenses and any distribution fees. They do not include the transaction costs of buying and selling portfolio securities.

As Management Costs are expressed as a percentage of the average net assets of the US ETF Securities and the value of those assets may change over time, the actual Management Costs for a period may be higher or lower than shown in the table above. For additional information about Fees and Expenses of the US ETF Securities, please see the US Prospectus.

Investors buying or selling CDIs on the ASX may incur customary brokerage fees, commissions and a bid/ask spread (being the difference between the price at which participants are willing to buy and sell CDIs on the ASX).

What is an ETF?

An ETF is an exchange traded fund, which is quoted for trading on the AQUA market of the ASX (in this case, it is the CDIs that are quoted for trading on the AQUA market of the ASX). Generally, these exchange traded funds comprise diversified investment portfolios of shares, bonds or real estate securities and are typically constructed using an indexed investment methodology.

ETFs seek to combine the best features of index managed funds and listed investment in one investment. Vanguard ETFs come with the benefits of low cost, broad diversification, transparency and tax efficiency due to low turnover of the underlying securities. However, unlike traditional index funds which are priced only once per day, ETF securities trade on a stock exchange so they can generally be bought and sold at any time during the trading day at prevailing market prices. ETFs carry certain risks (refer to the section '2. Risks' for further details).

Who is Vanguard?

Vanguard Investments Australia Ltd (Vanguard) is a wholly owned subsidiary of The Vanguard Group, Inc. The Vanguard Group, Inc. is one of the world's largest global investment management companies, with more than AUD \$10.8 trillion in assets under management as of 31 January 2023 including over AUD \$3 trillion in ETFs. In Australia, Vanguard has been serving financial advisers, retail clients and institutional investors for 25 years.

Who is involved in the ETF process?

The role of Vanguard is to be the issuer of the cross-listed US ETF Securities, via CDIs, into the Australian market (refer to page 9 for further details). To accomplish this, Vanguard has entered into an Intermediary Authorisation Agreement with VGI. Neither the US Fund nor VGI holds an Australian Financial Services Licence (AFSL).

Other roles of Vanguard are to:

- contract with relevant parties in Australia to ensure that the CDIs are properly created for the Australian market;
- contract with an appropriate share registry to ensure that the relevant investor details are maintained in regard to the CDIs that are quoted on the AQUA market of the ASX; and
- help maintain an efficient trading market by assigning at least one market maker.

VGI, either itself or through a subsidiary, will manage the investments of the US Fund and process the creation and redemption orders of the US ETF Securities in the US.

The US ETF Securities are held by Depository Trust Company (DTC) which is a limited purpose trust company that was created in the US to hold the securities of its participants (refer to page 9 for further details).

Computershare Trust Company, N.A. (a DTC Participant) has entered into a Custody Agreement with CHESSE Depository Nominees Pty Limited (CHESSE Depository Nominees), such that CHESSE Depository Nominees becomes the holder of the underlying US ETF Securities that will be cross-listed into the Australian market.

Computershare Investor Services Pty Limited (Computershare) has been engaged by Vanguard under a Share Registry Agreement to maintain the Australian register of CDI holders and provide services to investors (including facilitating payment of any distributions) in relation to their CDI holdings. Computershare keeps investor records including the quantity of securities held by an investor and how the securities are held. Computershare's role is to also facilitate the transfer of US ETF Securities, created in the US, for transacting in Australia.

Contact details

Product issuer
Vanguard Investments Australia Ltd
Level 13
130 Lonsdale Street
Melbourne Vic 3000

Share registrar
Computershare Investor Services Pty Limited
Yarra Falls
452 Johnston Street
Abbotsford Vic 3067

Quotation under the AQUA Rules of the ASX

The AQUA market service aims to provide managed funds, ETFs and structured products (collectively referred to as ETPs) with a more tailored framework for the quoting of these products on the ASX market and access to back office clearing and settlement.

The key distinction between products admitted under the ASX Listing Rules and those quoted under the ASX AQUA Rules is the level of control and influence that the issuer has over the underlying instrument. See table below for the main differences between the ASX Listing Rules and the ASX AQUA Rules:

ASX Listing Rules	ASX AQUA Rules
<p>The equity issuer:</p> <ul style="list-style-type: none"> Controls the value of its own securities and the business it runs; and The value of those securities is directly influenced by the equity issuer's performance and conduct. <p>For example, a company's management and Board generally control the company's business and, therefore, have direct influence over the company's share price.</p>	<p>The AQUA Product issuer:</p> <ul style="list-style-type: none"> Does not control the value of the assets underlying its products but; Offers products that give investors exposure to the underlying assets - such as shares, indices, currencies or commodities. <p>The value (or price) of products quoted under the AQUA Rules is dependent upon the performance of the underlying assets rather than the financial performance of the issuer itself.</p> <p>For example, an ETP issuer does not control the value of the securities it invests in.</p>

Source: ASX Rules Framework (2011)

The following information highlights the key differences between the effect of listing under the ASX Listing Rules and quotation under the AQUA Rules.

Information	ASX Listing Rules	ASX AQUA Rules
Continuous disclosure	<ul style="list-style-type: none"> Products under the Listing Rules are subject to the continuous disclosure requirements under Listing Rule 3.1 and section 674 of the <i>Corporations Act</i> 	<ul style="list-style-type: none"> Issuers of products quoted under the AQUA Rules are not subject to the continuous disclosure requirements under Listing Rule 3.1 and section 674 of the <i>Corporations Act</i>. There is a requirement under the AQUA Rules that an issuer of a product quoted under the AQUA Rules provide the ASX with any information that the non-disclosure of which may lead to the establishment of a false market in its products or would materially affect the price of its products. <p>What obligations apply under the AQUA Rules?</p> <ul style="list-style-type: none"> There is an obligation on issuers of ETFs to disclose information about the NAV of the ETFs daily via either the ASX MAP or issuer's website (as specified in the ETFs' Product Disclosure Statement). Issuers of ETFs must also disclose information about dividends, distributions and other disbursements to the ASX via ASX MAP. Any other information that is required to be disclosed to ASIC under section 675 of the <i>Corporations Act</i> must be disclosed to the ASX via ASX MAP at the same time it is disclosed to ASIC. Any other information that would be required to be disclosed to an overseas securities exchange operator (such as the New York Stock Exchange) under section 323DA of the <i>Corporations Act</i> if the Units were admitted under the Listing Rules.
Periodic disclosure	<ul style="list-style-type: none"> Products under the Listing Rules are required to disclose half yearly and annual financial information or annual reports under Chapter 4 of the Listing Rules. 	<ul style="list-style-type: none"> Responsible entities of AQUA Products that are ETFs are still required to lodge with ASIC financial reports under Chapter 2M of the <i>Corporations Act</i>. Under the AQUA Rules, the responsible entity must disclose these financial reports to the ASX at the same time as lodgement with ASIC. Issuers of ETFs must disclose the total number of ETF Securities on issue via ASX MAP within 5 business days of the end of each month.

<p>Corporate control</p>	<ul style="list-style-type: none"> Requirements in the <i>Corporations Act</i> and the Listing Rules in relation to matters such as takeover bids, share buy-backs, change of capital, new issues, restricted securities, disclosure of directors' interests and substantial shareholdings apply to companies and listed schemes. 	<ul style="list-style-type: none"> Certain requirements in the <i>Corporations Act</i> and the Listing Rules in relation to matters such as takeover bids, buy-backs, change of capital, new issues, restricted securities, disclosure of directors' interests and substantial shareholdings that apply to companies and listed schemes do not apply to products quoted under the AQUA Rules. Issuers of products quoted under the AQUA Rules are subject to the general requirement to provide the ASX with any information concerning itself the non-disclosure of which may lead to the establishment of a false market or materially affect the price of its products.
<p>Related party transactions</p>	<ul style="list-style-type: none"> Chapter 10 of the Listing Rules, which relates to transactions between an entity and persons in a position to influence the entity, specifies controls over related party transactions. 	<ul style="list-style-type: none"> Chapter 10 of the Listing Rules does not apply to AQUA Products. ETPs that are registered managed investment schemes are subject to Chapter 2E and Part 5C.7 of the <i>Corporations Act</i>.
<p>Auditor rotation obligations</p>	<ul style="list-style-type: none"> There are specific requirements in relation to auditor rotation under Part 2M.4 Division 5 of the <i>Corporations Act</i>. 	<ul style="list-style-type: none"> Issuers of products quoted under the AQUA Rules are not subject to the requirements under Part 2M.4 Division 5 of the <i>Corporations Act</i>. Responsible entities of registered managed investment schemes will continue to be required to undertake an independent audit of its compliance with the scheme's compliance plan in accordance with section 601HG of the <i>Corporations Act</i> and the auditor must not be the auditor of the scheme's financial statements (though they may be from the same firm).
<p>Product disclosure</p>	<ul style="list-style-type: none"> Entities admitted under the Listing Rules are subject to the requirements of the <i>Corporations Act</i> in relation to the issue of a product disclosure statement or prospectus. Information on the risks associated with an investment in a product is expected to be included. 	<ul style="list-style-type: none"> Products quoted under the AQUA Rules will also be subject to these requirements of the <i>Corporations Act</i>. Investors should read the product disclosure statement or prospectus carefully before investing in an AQUA Product to fully understand the risks involved in investing in these types of products.

Source: ASX Rules Framework (2011) and ASX Operating Rules

Market Maker

The AQUA Rules contain certain market making requirements. A market maker's role is to satisfy supply and demand for CDIs. They do this by fulfilling two key functions:

- Providing liquidity to the market by providing continuous bid and ask prices and acting as the buyer and seller of CDIs throughout the day; and
- Applying to convert additional CDIs, where necessary, to meet supply and demand.

Market makers seek to provide continuous liquidity to the market. The process begins with the issuer distributing a net asset value for the US ETF Security to the market every day, allowing market makers to price the CDI. Market makers use this information to determine the price of CDIs and places a bid/ask spread around this value before sending these prices to the stock exchange as bid and ask orders. The orders are published to the market, and investors can either 'hit' orders to trade with the market maker or send their own orders to the exchange and wait for someone else to 'hit' them. Market maker orders are updated continuously throughout the day to reflect price changes in the underlying securities.

The market maker(s) that Vanguard has appointed for the Vanguard All-World ex-US Shares Index ETF have been selected on the basis of their experience in trading and market making in both Australia and international markets. Most importantly, the firm(s) selected by Vanguard currently make markets on the ASX in existing Australian quoted ETF products and may have agreements with the ASX which provide certain financial incentives for the market maker to operate in this capacity. The market makers selected (or their offshore affiliates) may also have global experience in trading exchange traded fund securities in other markets, such as the New York Stock Exchange. Vanguard may change the lead market maker or appoint additional market makers.

CHESSE Depository Interests (CDIs)

Investors in the Vanguard All-World ex-US Shares Index ETF offered in this Prospectus will hold a CDI rather than a US ETF Security. CDIs are Australian financial instruments designed to give its holders rights and entitlements (i.e. a beneficial interest) in relation to holding foreign financial products, such as the US ETF Securities. A Depository Nominee holds title on behalf of CDI holders. In the case of the US ETF Securities, the nominee is CHESSE Depository Nominees Pty Limited (CDN) (AFSL 234 514), who is an approved participant in the clearing and settlement facility operated by ASX Settlement Pty Limited.

CDI holders are not holders of the US ETF Security. Some entitlements accrue to holders of US ETF Securities directly such as voting rights and corporate actions. This can alter the entitlements of a CDI holder. The ratio of CDIs to corresponding US ETF Securities is one-to-one.

In relation to *voting*, if a meeting of holders of US ETF Securities is convened, each holder of CDIs will be given notice of the meeting. The notice will include a form permitting the CDI holder to direct the Depository Nominee to cast, authorise or arrange the casting of, proxy votes in accordance with the CDI holder's written directions. Only holders of US ETF Securities (as shown on DTC records or DTC Participant records) or their proxies can vote at meetings of holders of US ETF Securities.

In relation to *corporate actions*, all economic benefits such as dividends, bonus issues, rights issues, capital reconstructions or similar corporate actions must flow through to CDI holders under the ASX Settlement Operating Rules. However, there may be differences from the entitlements you would receive if you held the US ETF Securities directly, for example, there may be rounding of entitlements where the depository nominee's holding is treated as a single holding rather than holdings corresponding to the interests of the CDI holders. The US ETF Securities are not subject to corporate takeovers.

CDIs may be held in uncertificated form on either the Issuer Sponsored Subregister or the CHESSE Subregister, which together make up the Australian CDI Register (maintained by Computershare).

For more information on CDIs generally, please refer to CDN's guidance note: Understanding CHESSE Depository Interests available on the ASX website.

CDI Holders interested in converting existing CDIs into US ETF Securities should contact Computershare on 1300 757 905.

Depository Trust Company (DTC)

The DTC, a limited-purpose trust company, was created in the US to hold securities of its participants (DTC Participants) and to facilitate the clearance and settlement of securities transactions among the DTC Participants in such securities through electronic book entry changes in accounts of the DTC Participants, thereby eliminating the need for physical movement of share certificates. DTC Participants include securities brokers and dealers, banks, trust companies, clearing corporations and certain other organisations.

2. Risks

Investors in the Vanguard All-World ex-US Shares Index ETF face a number of investment risks. It is important to keep in mind one of the main principles of investing: the higher the potential reward, the higher the risk of losing money. The reverse is also generally true: the lower the risk, the lower the potential reward. An investment in an ETF could lose money over short or even long periods of time.

The price of an ETF can fluctuate within a wide range, like fluctuations of the overall stock market. When considering an investment in the Vanguard All-World ex-US Shares Index ETF, personal tolerance for fluctuating market values should be taken into account. There is no guarantee that the value of investment capital will be maintained.

The risks described in the US Prospectus for the US ETF Security are:

- Stock market risk;
- Country/regional risk;
- Emerging markets risk;
- Currency risk;
- ETF trading risks;
- Index replicating risk.

The above risk descriptions also apply to the Vanguard All-World ex-US Shares Index ETF. Prospective investors should read and consider these risks in the US Prospectus (as well as the additional risks identified below) before making an investment decision. Additional risks specific to the offer in Australia are detailed below:

Currency risk

Fluctuations in the value of the Australian dollar versus foreign currencies can affect the returns from overseas investments. This is because losses or gains must be converted back into Australian dollars.

The Vanguard All-World ex-US Shares Index ETF offered in this Prospectus does not hedge any of its exposure to foreign currencies.

A weaker Australian dollar increases the value of investments held in non-Australian dollars and therefore benefits the Australian investor holding non-Australian dollar denominated assets, such as international shares. Conversely, if the value of the Australian dollar rises, the value of investments held in non-Australian dollar denominated assets will fall.

Fluctuations in the exchange rate between when a distribution is paid on the US ETF Security and when these distributions are converted into Australian dollars by Computershare for holders of CDIs can also result in foreign currency gains and losses arising for holders of CDIs. This is discussed in further detail in the section 'Distributions'.

Regulatory and tax risk

This is the risk that a government or regulator may introduce regulatory and tax changes or a court makes a decision regarding the interpretation of the law that affects the value of securities in which the US Fund invests, the value of the interests in the Vanguard All-World ex-US Shares Index ETF, or the tax treatment of the investment in the Vanguard All-World ex-US Shares Index ETF.

The Vanguard All-World ex-US Shares Index ETF may be affected by changes to legislation or government policy both in Australia and in other countries. These changes are monitored by Vanguard and action is taken, where appropriate, to facilitate the achievement of the Vanguard All-World ex-US Shares Index ETF's objectives.

Please refer to the section '4. Investor taxation' for information about the tax impacts for the offer in Australia.

Trading and liquidity risk

In certain circumstances, the ASX and/or other exchanges may suspend the trading of CDIs and therefore investors will not be able to buy or sell the CDIs on the ASX.

The ASX also imposes certain requirements for the Vanguard All-World ex-US Shares Index ETF to continue to be quoted. Vanguard will endeavour to meet these requirements at all times to ensure the Vanguard All-World ex-US Shares Index ETF remains quoted.

There can be no assurances that there will always be a liquid market for securities quoted on the AQUA market. Vanguard has appointed a market maker to assist in maintaining liquidity for the Vanguard All-World ex-US Shares Index ETF on the ASX, but there is no guarantee that the market maker will be able to maintain liquidity.

The net asset value of the US ETF Securities may differ from the trading price of the CDIs on the ASX. The trading price is dependent on a number of factors including the demand and supply of the CDIs, investor confidence and how closely the value of the assets of the US Fund tracks the performance of the index.

3. How to transact with Vanguard

Eligible Investors

To convert US ETF Securities to CDIs (and vice versa), an Eligible Investor can contact an Authorised Participant to purchase or redeem US ETF Securities. Interests in the US Fund are issued and redeemed in large blocks known as creation units. To purchase or redeem a creation unit you must be an Authorised Participant or you must trade through a broker that is an Authorised Participant. An Authorised Participant is a participant in the Depository Trust Company (DTC) that has executed a Participant Agreement with VGI.

The Authorised Participant will then arrange for the purchase or redemption of US ETF Securities with the US Fund. These US ETF Securities issued by the US Fund will be held by Computershare Trust Company, N.A. on behalf of the Eligible Investor (in the name of CHESS Depository Nominees). The equivalent value of CDIs (1 US ETF Security for 1 CDI) will then be issued to the Eligible Investor.

Please note that transaction fees may apply to Eligible Investors in Australia when the Authorised Participant purchases or redeems US ETF Securities. These costs are negotiable directly with the relevant Authorised Participants.

For further details on the number of US ETF Securities in a creation unit and the transaction fee for the US ETF Securities, please refer to the latest SAI.

For further details on the purchase and redemption process, please contact Vanguard ETF Capital Markets Team on 1300 655 888 who can assist you with the process.

Other Investors - buying and selling ETFs on the secondary market

Investors who are not Eligible Investors can acquire, via the secondary market, CDIs of the US ETF Securities which are publicly traded via the ASX. To acquire a US ETF Security in the form of a CDI, investors will need to have a brokerage account.

When investors buy or sell CDIs on the secondary market, brokers may charge brokerage fees or commissions. Investors may also incur the cost of the 'bid/ask spread' which is the difference between the price at which the broker will purchase the security and the higher price at which the broker will sell the security. In addition, because the secondary market transactions occur at market prices, investors may pay more (premium) or less (discount) than the Net Asset Value when buying a CDI and receive more or less than the Net Asset Value when selling it.

Distributions

Distributions from the US Fund are generally calculated quarterly in March, June, September and December. The amount and timing of distributions may vary. Investors should be aware that there may be periods (including long periods of time) in which no distribution is made. If this should occur, details will be available on our website.

The distributions payable in respect of the CDIs quoted on the ASX will be declared and paid by the US Fund in US dollars, and converted by Computershare into Australian dollars prior to payment to holders of CDIs.

CDI holders will generally receive distribution payments (to which they are entitled, if any) within 20 business days following the record date in Australia. The value of the Australian dollar distribution payment is dependent on the prevailing foreign exchange rate a few days prior to the payment date. That is, the dollar amount of the distribution will first be determined and paid by the US Fund in US dollars and Computershare will then convert this into Australian dollars before making the distribution payment to holders of CDIs. The relevant exchange rate is as agreed from time to time between Computershare and its broker, net of fees and commissions.

From time to time, the foreign exchange rate can be volatile and the exchange rate when the distribution is declared and paid by the US Fund may differ from the prevailing foreign exchange rate at the date at which the distribution is converted into Australian dollars. This can give rise to foreign currency gains and losses for holders of CDIs in some circumstances.

Payment of distributions will be generally made by direct credit into a nominated Australian bank account. A distribution reinvestment plan is not available for the Vanguard All-World ex-US Shares Index ETF offered in this Prospectus. Please refer to the section '4. Investor taxation' for information on the tax consequences of receiving distributions from the US Fund.

4. Investor taxation

The taxation information in this Prospectus is provided for general information only. It is a broad overview of some of the Australian and US tax consequences associated with investing in the Vanguard All-World ex-US Shares Index ETF offered in this Prospectus, and is not intended to provide an exhaustive or definitive statement as to all the possible tax outcomes for investors.

It does not take into account the specific circumstances of each person who may invest in the Vanguard All-World ex-US Shares Index ETF and should not be used as the basis upon which potential investors make a decision to invest in the Vanguard All-World ex-US Shares Index ETF. As each investor's circumstances are different, Vanguard strongly recommends that an investor obtains independent professional tax advice concerning the tax implications of investing in and dealing in interests in the Vanguard All-World ex-US Shares Index ETF, particularly if an investor is not a resident of Australia or is a 'temporary resident' of Australia for tax purposes.

The Australian and US taxation information in this Prospectus have been prepared based on tax laws and administrative practice available at the date of this Prospectus. Any changes in the tax law or administrative practice that are announced subsequent to this date may alter the taxation information provided in this Prospectus.

Taxation of Australian tax resident investors

The taxation information provided in this Prospectus relates only to Australian tax residents. Investors who are foreign residents for Australian tax purposes should seek independent professional advice in relation to their specific circumstances.

Distributions from the ETF

Distributions made from the US Fund to an Australian tax resident investor in the Vanguard All-World ex-US Shares Index ETF should be treated as assessable foreign sourced income for the Australian tax resident investor in the tax year in which the distributions are received.

For Australian tax purposes, Australian tax resident investors are assessed on the amount of any distributions received during a tax year gross of any US withholding tax deducted. Australian tax resident investors may, depending on their circumstances, be entitled to claim an offset against the Australian tax payable on their foreign sourced income for any US tax withheld, as described below. Please see an Australian tax adviser in order to determine whether benefits of any tax offsets for US tax withheld from distributions in the Vanguard All-World ex-US Shares Index ETF can be obtained.

The US generally imposes a 30% withholding tax on dividends paid by US corporations to non-US persons, but this rate may be reduced to 15% under the Australia/US income tax treaty. Australian tax resident investors may be required to complete US tax forms in order to qualify for the reduced rate under the treaty. The US Fund distributes its portfolio income and any short-term capital gains as a dividend generally subject to the applicable US withholding rate. Unlike those distributions, any long-term capital gains the US Fund distributes that are reported to investors as capital gain dividends will generally not be subject to US withholding tax.

Distributions paid by the Vanguard All-World ex-US Shares Index ETF to Australian tax resident investors will be paid by the US Fund in US dollars and is then converted into Australian dollars by Computershare prior to payment to Australian tax resident investors. The distribution payment advice will show the gross distribution amount, tax withheld and net distribution amount in US dollars and the exchange rate used to convert the net distribution amount to Australian dollars. Australian tax resident investors may use these exchange rates to convert the gross distribution and tax withheld to Australian dollars for Australian income tax return purposes and, if relevant, to determine the amount of any foreign currency gains or losses that may arise for Australian tax purposes in respect of the distribution.

The US Fund qualifies as a Regulated Investment Company (RIC) under subchapter M of the US Internal Revenue Code of 1986 and intends to continue to qualify as a RIC in the future. As a result, the US Fund expects to benefit from special US tax rules that will generally cause it to pay no material US tax on its income or gains. However, distributions to investors may be subject to US withholding tax as described above.

The US Fund may also be subject to withholding taxes on income earned by the US Fund outside of the US. The distributions paid by the Vanguard All-World ex-US Shares Index ETF to Australian tax resident investors will be net of withholding taxes payable by the US Fund on the receipt by the US Fund of its non-US income.

Selling or transferring CDIs

If Australian tax resident investors in the Vanguard All-World ex-US Shares Index ETF dispose of their CDIs by selling or otherwise transferring the CDIs to another person (e.g. selling their CDIs on-market), they may be liable for tax on any gains realised from their disposal.

For Australian tax resident investors who do not hold their CDIs on capital account for Australian income tax purposes (e.g. an investor who is in the business of dealing in securities such as CDIs), any gains realised on the disposal of CDIs should be assessable as ordinary income. Conversely, where such investors incur a loss in respect of dealings in their CDIs in a tax year, this loss may, subject to certain integrity requirements, be available to offset assessable income in that tax year or subsequent tax years.

For Australian tax resident investors who hold their CDIs on capital account for Australian income tax purposes, a capital gain or loss may be made on the disposal of their CDIs. Some investors may be eligible for the capital gains tax (CGT) discount (50% for individuals and certain trusts and 33 1/3% for complying superannuation funds) if the CDIs are held for at least 12 months before they are disposed of and the other relevant requirements are satisfied. Investors should obtain independent professional tax advice about the availability of the CGT discount. Any capital loss arising on a disposal of CDIs in a tax year may only be offset against capital gains made in that tax year or subsequent tax years.

Australian tax resident investors should not generally be subject to U.S. federal income tax on a sale or transfer of CDIs.

US estate tax

US estate tax may apply to an individual who is neither a US citizen nor domiciled in the US and, at the time of death, is the beneficial owner of the US ETF Securities. Generally, the first USD 60,000 of US-situated assets are exempt from US estate tax. The amount of the estate tax may be determined by the value of the US ETF Securities owned at death and may be reduced under the Australia/US estate tax treaty.

All investors should seek professional tax advice in relation to the US estate tax rules.

5. Other information you need to know

Financial information

Financial information for the US Fund appears in the Annual Report of the US Fund. This report can be found on Vanguard's website. Outlined below is a summary of the financial accounts:

US Fund	Vanguard FTSE All-World ex-US Index Fund
Date	31 October 2022
Net assets of Fund	USD 43.5 billion*
Net assets of ETF class	USD 29.5 billion*
Outstanding ETF shares	644.7 million*
NAV price per ETF share	USD 45.79

*These are rounded figures. For additional financial information about the US Fund, please see the US Fund's annual report and the Financial Highlights table in the US Prospectus.

Financial statements of the US Fund

The Financial Statements and Notes contained in the Annual Report of the US Fund are incorporated by reference into and are deemed for US legal purposes to be part of the SAI. However, for the purpose of section 712 of the *Corporations Act*, this Prospectus does not incorporate the Annual Reports of the US Fund.

Interests of Directors

Details about the Trustees and officers of the US Fund (and details of their remuneration) are referred to in the US Prospectus and SAI. Directors of Vanguard and their related parties may hold interests in US ETF securities from time to time.

Except as set out in this Prospectus, the US Prospectus, or the SAI, as may be updated:

- no Trustee of the US Fund or director of Vanguard has had in the last 2 years before lodgement of this Prospectus, an interest in:
 - the formation or promotion of Vanguard, VGI, the US Fund or the Vanguard All-World ex-US Shares Index ETF;
 - the offer in this Prospectus; or
 - any property acquired or proposed to be acquired by Vanguard, VGI, the US Fund or the Vanguard All-World ex-US Shares Index ETF in connection with its formation or promotion of the offer in this Prospectus; and
- no amounts, whether in cash or shares or otherwise have been paid or agreed to be paid (by anyone), and no benefit has been given or agreed to be given (by anyone), to any Trustee of the US Fund or director of Vanguard, either to induce them to become, or to qualify as, a trustee, a director, or otherwise for services provided by them in connection with the promotion or formation of Vanguard, VGI, the US Fund or the Vanguard All-World ex-US Shares Index ETF or the offer in this Prospectus.

US Fund Trustees

The following table provides information about the Trustees of the US Fund.

Name, year of birth	Current position	Trustee / officer since
Interested Trustee		
Mortimer J. Buckley (1969)	Chairman of the Board, Chief Executive Officer, and President	January 2018

Mr. Buckley is considered a "interested persons" of the US Fund, as that term is defined in the Investment Company Act of 1940 (in the US), because they are officers of the US Fund.

Independent Trustees

Tara Bunch (1962)	Trustee	November 2021
Emerson U. Fullwood (1948)	Trustee	January 2008
F. Joseph Loughrey (1949)	Trustee	October 2009
Mark Loughridge (1953)	Lead Independent Trustee	March 2012
Scott C. Malpass (1962)	Trustee	March 2012
Deanna Mulligan (1963)	Trustee	January 2018
André F. Perold (1952)	Trustee	December 2004
Sarah Bloom Raskin (1961)	Trustee	January 2018
David Thomas (1956)	Trustee	July 2021
Peter F. Volanakis (1955)	Trustee	July 2009

Directors of Vanguard

The table below provides information about the directors of Vanguard.

Name	Current position	Board member since
Daniel Shrimski	Director	2021
John Bendl	Director	2022
Kim Petersen	Director	2022
Curt Jacques	Director	2022

Interests of other parties

Vanguard is an Australian financial services licensee and the AQUA product issuer of the CDIs. Vanguard will receive from VGI an amount equal to all costs incurred by Vanguard in relation to being the issuer of the cross-listed ETF plus a margin as agreed from time to time.

Consents

FTSE has given and has not withdrawn their consent to the statements relating to FTSE of this Prospectus in the format and context in which they appear.

Consents to lodge Prospectus

This Prospectus has been prepared by Vanguard. Each of the Trustees of the US Fund and the directors of Vanguard has consented to the lodgement of this Prospectus with ASIC.

Incorporating other documents

The US Prospectus and SAI are referred to and incorporated by reference in this Prospectus under section 712 of the *Corporations Act*. The SAI is incorporated by reference into its US Prospectus and for US legal purposes is a part of the US Prospectus.

The US Prospectus and the SAI have been lodged with ASIC, and this Prospectus simply refers to parts of these documents instead of setting out the information that is contained in them. The information below is provided to allow a person to whom the offer is made to decide whether to obtain a copy of either the US Prospectus or the SAI.

The US Prospectus contains information regarding:

- The US Fund's investment objective, fees and expenses, primary investment strategies, principal risks, performance, investment advisor and portfolio manager, purchase and sale of the Fund securities, US tax information and policy on payments to financial intermediaries.
- US ETF Securities and how they differ from conventional mutual fund securities.
- How to buy and sell US ETF Securities.
- Share class overview, market exposure, security selection, other investment policies and risks, cash management and temporary investment measures.
- Special risks of US ETF Securities, portfolio holdings disclosure policy and turnover rate.
- The US Fund, VGI and its structure, VGI employees with oversight, US Fund distributions and basic US tax points.
- How the US Fund's net asset value is determined.
- Highlights from the US Fund's financial statements.

The SAI contains information regarding:

- The US Fund's organisational structure and service providers.
- Characteristics of the US Fund's securities.
- US tax status of the US Fund and tax consequences to investors of investing in the US Fund.
- The US Fund's fundamental and non-fundamental policies ("fundamental" policies are those that cannot be changed without shareholder approval).
- The purchase and redemption of the US Fund's non-ETF securities.
- Management of the US Fund.
- Officers and trustees of the US Fund, trustee compensation and trustee ownership of fund securities.
- Portfolio holdings disclosure policies and procedures.
- The US Fund's portfolio managers, including summary information about other accounts they manage and their compensation structure.
- The US Fund's "best execution" policies and brokerage expenses.
- The US Fund's proxy voting guidelines.
- The US ETF share-class, including exchange listing and trading, conversions and exchanges, book entry only system and purchase and redemption of US ETF Securities in creation units.

The US Prospectus and SAI may be amended or supplemented from time to time. Documents that amend the US Prospectus and SAI may be incorporated by reference into this Prospectus under section 712 of the *Corporations Act*.

Copies of the documents incorporated in this Prospectus (including the US Prospectus and SAI) and documents amending the US Prospectus and SAI may be obtained by contacting Vanguard ETF Capital Markets Team on 1300 655 888 or by visiting Vanguard's website at www.vanguard.com.au. These documents will be available free of charge.

Other filings in the US

Certain other documents which may be filed or prepared by VGI in the US subsequent to the date of this Prospectus (other than those documents identified above) may be incorporated by reference in the US Prospectus. Such documents (if any) cannot (for legal and timing reasons) be taken to be included in this Prospectus under section 712 of the *Corporations Act*. Such documents (if any) may be given to the ASX as announcements by Vanguard and will be made available on Vanguard's website.

ASX confirmations and waivers

For the purposes of the ASX Operating Rules (ASX Operating Rule 7100), the Vanguard All-World ex-US Shares Index ETF constitutes an 'ETF'.

The ASX has granted Vanguard a waiver from ASX Market Rule 10A.4.1 (ASX Operating Rule Schedule 10A.4.1) such that the investment strategies or policies can be amended without the approval of 75% of votes cast on a proposed resolution. Any change to the investment strategies or policies of the US Fund will be subject to the requirements as set out in the US Prospectus. In this regard, the board of trustees of the US Fund, which oversees the management of the US Fund, may change investment strategies or policies in the interests of shareholders without a shareholder vote. For this reason, it is unlikely that an Australian investor would be able to influence the outcome of a change in the investment strategies or policies.

ASIC relief

ASIC has issued an instrument of relief INS 09-00290 dated 16 April 2009, relating to offers for sale of CDIs on the ASX. ASIC has also issued an instrument of relief INS 09-00289 dated 16 April 2009, relating to the ability of Vanguard Investments Australia Ltd to offer CDIs under a Prospectus.

If you have a complaint

If you have a complaint, please contact us on any of the following channels so that we can work together towards a resolution.

Email: clientservices@vanguard.com.au
Phone: 1300 655 101 (from 8:00am to 6:00pm AET, Monday to Friday)
Secure message: via your Vanguard Online Secure Message Portal (where available)
Mail: Vanguard Investments Australia
GPO Box 1837
Melbourne VIC 3001

Our Complaints Handling Policy is available on our website and in hard copy upon request. We aim to resolve your complaint as quickly as possible. For most standard complaints, we will provide you with a written internal dispute resolution response within 30 calendar days after receiving your complaint. Complex complaints may have a different maximum timeframe for responding. We will notify you if a different maximum timeframe applies to your complaint.

In the event that you are not satisfied with the outcome of your complaint, you have the right to refer the matter to an external dispute resolution process – the Australian Financial Complaints Authority (AFCA). AFCA provides fair and independent financial services complaint resolution that is free to consumers. You can make a Complaint to AFCA online, by letter, email or by phone. The AFCA complaint resolution service may only be available to retail clients

It is important to note that time limits apply to some types of complaints lodged with the AFCA.

Australian Financial Complaints Authority

Website: www.afca.org.au

Email: info@afca.org.au

Telephone: 1800 931 678 (free call)

Mail: Australian Financial Complaints Authority GPO Box 3, Melbourne VIC 3001

Privacy policy

We are committed to respecting the privacy of your personal information. Privacy laws regulate, among other matters, the way organisations collect, use, disclose, keep secure and give people access to their personal information. Our privacy policy states how we manage personal information. We collect personal information in the application process, and may collect additional personal information in the course of managing your investment, in order to provide this product to you and to establish and manage your investment in the Fund or ETF. We may obtain information about you or any beneficial owners from third parties if it is believed this is necessary to comply with relevant laws. We may be required by law to disclose personal information to relevant regulators (whether in or outside of Australia).

We may provide an investor's personal information to our service providers for certain related purposes (as described under the Privacy Act 1988 (Cth)) such as account administration and the production and mailing of statements. We may also use an investor's personal information and disclose it to our service providers to improve customer service (including companies conducting market research) and to keep investors informed of Vanguard's products and services, or to their financial adviser or broker to provide financial advice and ongoing service. We will assume consent to personal information being used for the purposes of providing information on services offered by Vanguard and being disclosed to market research companies for the purposes of analysing Vanguard's investment base, unless otherwise advised.

If you do not provide your personal information as requested, we may not be able to process or accept your application. To obtain a copy of the Vanguard Privacy Policy, please visit www.vanguard.com.au or call us directly on 1300 655 101. You may request to update or access any personal information we hold about you.

US Foreign Account Tax Compliance Act (FATCA) and Organisation for Economic Cooperation and Development (OECD) Common Reporting Standard (CRS)

FATCA is a US law which impacts investors worldwide. FATCA attempts to minimise US income tax avoidance by US persons investing in foreign assets, including through their investments in foreign financial institutions. FATCA requires reporting of US persons' direct and indirect ownership of non-US accounts and non-US entities to the US Internal Revenue Service (IRS). Similarly, the OECD has established CRS, also known as the Standard for Automatic Exchange of Financial Account Information (AEOI), which requires participating jurisdictions to obtain information from their financial institutions and exchange it with other participating jurisdictions. CRS/AEOI became effective in Australia on 1 July 2017.

Under FATCA, the Australian Government has entered into an Inter-Governmental Agreement (IGA) with the Government of the United States of America for reciprocal exchange of taxpayer information. Under the IGA, financial institutions operating in Australia report information to the Australian Taxation Office (ATO) rather than the IRS. The ATO may then pass the information on to the IRS.

The US Fund or its authorised agents, such as the registrar – Computershare, may request such information or documents from you as is necessary to verify your identity and FATCA and AEOI status, including self-certification forms. The US Fund or its authorised agents may disclose this information to the IRS or ATO (who may share this information with other tax authorities) as necessary to comply with FATCA, the IGA, AEOI or applicable implementing law or regulation.

Vanguard is not able to provide tax advice and strongly encourages investors to seek the advice of an experienced tax advisor to determine what actions investors may need to take in order to comply with FATCA and AEOI.

Anti-money laundering & Counter Terrorism Financing (AML/CTF) obligations, Sanctions and relevant laws

Vanguard is required to comply with laws and regulations regarding the prevention of money laundering and terrorism financing, sanctions obligations, anti-bribery and anti-corruption, modern slavery and other laws

Vanguard is required to carry out procedures that verify your identity before providing services to you, and from time to time thereafter.

By completing the Application/Redemption process you agree that:

- You are not applying for units of the ETF under an assumed name (i.e. aliases or pseudonyms).
- Any money you invest is not derived from or related to any criminal or illegal activities.
- Any proceeds will not be used in relation to any criminal, terrorism financing or illegal activities.
- You will not initiate, engage in, or effect a transaction that may be in breach of AML/CTF law, anti-bribery and anti-corruption laws or sanctions (or the law or sanctions of any other country) in which Vanguard operates in.
- If we ask, you will need to provide us with any identity and additional information we may require to comply with relevant laws or legislation (such as AML/CTF laws or sanctions). This could include, but is not limited to, information about you, your related parties and your transactions, including the source of funds used in connection with the investment. You also agree that we may request this information from third parties if necessary to comply with relevant laws or legislation.
- To comply with relevant laws and legislation, we may be required to act, including delaying or refusing the processing of any application or any transaction related to your investment if we are concerned that doing so may cause us to breach any legal obligation or cause us to commit or participate in an offence under any relevant laws and legislation.
- Where legally obliged to do so, we may disclose the information gathered to regulatory and/or law enforcement agencies or other entities. We may share this information with other members of the Vanguard Group.
- Vanguard is not liable for any losses caused by exercising its rights under this section.

Vanguard may obtain information about the investor, their legal representative, anyone acting on their behalf, any beneficial owners from third parties or the source of funds used in connection with the investment if it is believed this is necessary to comply with relevant Laws. Additionally, in order to comply with these relevant Laws, Vanguard may be required to disclose information to relevant law enforcement authorities and regulators of relevant Laws (whether in or outside of Australia).

Under relevant laws, applications and or redemption requests made without providing all the information and supporting identification documentation requested cannot be processed until this information has been provided and, as a result, delays in processing may occur.

6. Glossary

AET means Australian Eastern Time

ASX means ASX Limited

ASIC means the Australian Securities and Investments Commission

Authorised Participant is a participant in the Depository Trust Company that has executed a Participant Agreement with Vanguard Marketing Corporation (a VGI subsidiary) in order to be eligible to purchase and redeem US ETF Securities with the US Fund

AQUA Rules mean Schedule 10A of the ASX Operating Rules

CDIs means CHESSE Depository Interests

CHESSE means the Clearing House Electronic Subregister System

CHESSE Depository Nominees means CHESSE Depository Nominees Pty Limited

Depository Trust Company or DTC means the company that is defined in this Prospectus

Eligible Investor means stockbrokers acting as principal, that is persons who have been authorised as 'trading participants' under the ASX Operating Rules

Pricing Basket means a basket of securities that is created to track the movements of a Fund, to assist with intra-day pricing.

SAI means the latest Vanguard International Equity Index Funds Statement of Additional Information for the US Fund lodged with ASIC and includes any documents lodged with ASIC that update the SAI

US Fund means the Vanguard FTSE All-World ex-US Index Fund

US Prospectus is the latest prospectus of the US ETF Securities lodged with ASIC and includes any documents lodged with ASIC that update the US Prospectus

US ETF Security or US ETF Securities means exchange traded fund shares in the US Fund

Vanguard means Vanguard Investments Australia Ltd (ABN 72 072 881 086 AFSL 227263)

VGI means The Vanguard Group, Inc.

FTSE Disclaimer

The Vanguard All-World ex-US Shares Index ETF (the "Product") has been developed solely by Vanguard. The "Product" is not in any way connected to or sponsored, endorsed, sold or promoted by the London Stock Exchange Group plc and its group undertakings (collectively, the "LSE Group"). FTSE Russell is a trading name of certain LSE Group companies. All rights in the FTSE All-World ex US Index (the "Index") vest in the relevant LSE Group company which owns the Index e.g., "FTSE®" "Russell®", "FTSE Russell®", are a trade mark(s) of the relevant LSE Group company and are used by any other LSE Group company under license. The Index is calculated by or on behalf of FTSE International Limited or its affiliate, agent or partner. The LSE Group does not accept any liability whatsoever to any person arising out of (a) the use of, reliance on or any error in the Index or (b) investment in or operation of the Product. The LSE Group makes no claim, prediction, warranty or representation either as to the results to be obtained from the Product or the suitability of the Index for the purpose to which it is being put by Vanguard.



Connect with Vanguard™ > vanguard.com.au

Vanguard Investments Australia Ltd
(The Product Issuer)

Registered office

Level 13
130 Lonsdale Street
Melbourne Vic 3000

Postal address

GPO Box 3006
Melbourne Vic 3001

Vanguard Client Services

8:00 am to 6:00 pm (AET) Monday to Friday

Monday to Friday

Telephone: 1300 655 101

E-mail: clientservices@vanguard.com.au

Vanguard Adviser Services

8:00 am to 6:00 pm (AET) Monday to Friday

Monday to Friday

Telephone: 1300 655 205

E-mail: adviserservices@vanguard.com.au

Vanguard ETF Capital Markets Team

10:00 am to 5:00 pm (AET) Monday to Friday

Monday to Friday

Telephone: 1300 655 888

E-mail: etf@vanguard.com.au

ASX enquiries

131 279 (within Australia)

+61 2 9338 0000 (outside Australia)

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U.S. Pat. No. 6,879,964, 7,337,138; 7,720,749; 7,925,573; 8,090,646; and 8,417,623.

PDSVEU 022023



Vanguard FTSE All-World ex-US ETF Prospectus

February 27, 2023

Exchange-traded fund shares that are not individually redeemable and are listed on NYSE Arca

Vanguard FTSE All-World ex-US Index Fund ETF Shares (VEU)

This prospectus contains financial data for the Fund through the fiscal year ended October 31, 2022.

The Securities and Exchange Commission (SEC) has not approved or disapproved these securities or passed upon the adequacy of this prospectus. Any representation to the contrary is a criminal offense.

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ETF Summary

Investment Objective

The Fund seeks to track the performance of a benchmark index that measures the investment return of stocks of companies located in developed and emerging markets outside of the United States.

Fees and Expenses

The following table describes the fees and expenses you may pay if you buy, hold, and sell ETF Shares of the Fund. You may pay other fees, such as brokerage commissions and other fees to financial intermediaries, which are not reflected in the table and example below.

Shareholder Fees

(Fees paid directly from your investment)

Transaction Fee on Purchases and Sales	None*
Transaction Fee on Reinvested Dividends	None*
Transaction Fee on Conversion to ETF Shares	None*

* None through Vanguard (Broker fees vary)

Annual Fund Operating Expenses

(Expenses that you pay each year as a percentage of the value of your investment)

Management Fees	0.05%
12b-1 Distribution Fee	None
Other Expenses	0.03%
Total Annual Fund Operating Expenses	0.08%

Example

The following example is intended to help you compare the cost of investing in the Fund's ETF Shares with the cost of investing in other funds. It illustrates the hypothetical expenses that you would incur over various periods if you were to invest \$10,000 in the Fund's shares. This example assumes that the shares provide a return of 5% each year and that total annual fund operating expenses remain as stated in the preceding table. You would incur these hypothetical expenses whether or not you were to sell your shares at the end of the given period. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

1 Year	3 Years	5 Years	10 Years
\$8	\$26	\$45	\$103

This example does not include the brokerage commissions that you may pay to buy and sell ETF Shares of the Fund.

Portfolio Turnover

The Fund pays transaction costs, such as commissions, when it buys and sells securities (or "turns over" its portfolio). A higher portfolio turnover rate may indicate higher transaction costs and may result in more taxes when Fund shares are held in a taxable account. These costs, which are not reflected in annual fund operating expenses or in the previous expense example, reduce the Fund's performance. During the most recent fiscal year, the Fund's portfolio turnover rate was 3% of the average value of its portfolio.

Principal Investment Strategies

The Fund employs an indexing investment approach designed to track the performance of the FTSE All-World ex US Index, a float-adjusted, market-capitalization-weighted index designed to measure equity market performance of international markets, excluding the United States. As of October 31, 2022, the Index included 3,566 stocks of companies located in 48 markets, including both developed and emerging markets. As of October 31, 2022, the largest markets covered in the Index were Japan, the United Kingdom, China, and Canada (which made up approximately 16%, 10%, 7%, and 7%, respectively, of the Index's market capitalization). The Fund attempts to replicate the target index by investing all, or substantially all, of its assets in the stocks that make up the Index, holding each stock in approximately the same proportion as its weighting in the Index.

Principal Risks

An investment in the Fund could lose money over short or long periods of time. You should expect the Fund's share price and total return to fluctuate within a wide range. The Fund is subject to the following risks, which could affect the Fund's performance:

- *Stock market risk*, which is the chance that stock prices overall will decline. Stock markets tend to move in cycles, with periods of rising prices and periods of falling prices. The Fund's investments in foreign stocks can be riskier than U.S. stock investments. Foreign stocks may be more volatile and less liquid than U.S. stocks. The prices of foreign stocks and the prices of U.S. stocks may move in opposite directions. In addition, the Fund's target index may, at times, become focused in stocks of a particular market sector, which would subject the Fund to proportionately higher exposure to the risks of that sector.
- *Country/regional risk*, which is the chance that world events—such as political upheaval, financial troubles, or natural disasters—will adversely affect the value of securities issued by companies in foreign countries or regions. Because the Fund may invest a large portion of its assets in securities of companies located in any one country or region, the Fund's performance may be hurt disproportionately by the poor performance of its investments in that area. Country/regional risk is especially high in emerging markets.
- *Emerging markets risk*, which is the chance that the stocks of companies located in emerging markets will be substantially more volatile, and substantially less liquid, than the stocks of companies located in more developed foreign markets because, among other factors, emerging markets can have greater custodial and operational risks; less developed legal, tax, regulatory, financial reporting, accounting, and recordkeeping systems; and greater political, social, and economic instability than developed markets.
- *Currency risk*, which is the chance that the value of a foreign investment, measured in U.S. dollars, will decrease because of unfavorable changes in currency exchange rates. Currency risk is especially high in emerging markets.
- *Index replicating risk*, which is the change that the Fund may be prevented from holding one or more securities in the same proportion as in its target index.

Because ETF Shares are traded on an exchange, they are subject to additional risks:

- The Fund's ETF Shares are listed for trading on NYSE Arca and are bought and sold on the secondary market at market prices. Although it is expected that the market price of an ETF Share typically will approximate its net asset value (NAV), there may be times when the market price and the NAV differ significantly. Thus,

you may pay more or less than NAV when you buy ETF Shares on the secondary market, and you may receive more or less than NAV when you sell those shares.

- Although the Fund's ETF Shares are listed for trading on NYSE Arca, it is possible that an active trading market may not be maintained.
- Trading of the Fund's ETF Shares may be halted by the activation of individual or marketwide trading halts (which halt trading for a specific period of time when the price of a particular security or overall market prices decline by a specified percentage). Trading of the Fund's ETF Shares may also be halted if (1) the shares are delisted from NYSE Arca without first being listed on another exchange or (2) NYSE Arca officials determine that such action is appropriate in the interest of a fair and orderly market or for the protection of investors.

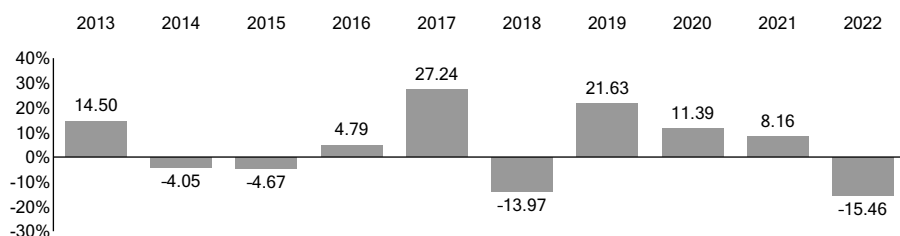
An investment in the Fund is not a deposit of a bank and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency.

Annual Total Returns

The following bar chart and table are intended to help you understand the risks of investing in the Fund. The bar chart shows how the performance of the Fund's ETF Shares (based on NAV) has varied from one calendar year to another over the periods shown. The table shows how the average annual total returns of the ETF Shares compare with those of the Fund's target index and a comparative index, which have investment characteristics similar to those of the Fund.

Returns for the FTSE Indexes shown are adjusted for withholding taxes applicable to U.S.-based funds organized as Delaware statutory trusts. Keep in mind that the Fund's past performance (before and after taxes) does not indicate how the Fund will perform in the future. Updated performance information is available on our website at vanguard.com/performance or by calling Vanguard toll-free at 800-662-7447.

Annual Total Returns — Vanguard FTSE All-World ex-US Index Fund ETF Shares



During the periods shown in the bar chart, the highest and lowest returns for a calendar quarter were:

	Total Return	Quarter
Highest	17.47%	June 30, 2020
Lowest	-23.67%	March 31, 2020

Average Annual Total Returns for Periods Ended December 31, 2022

	1 Year	5 Years	10 Years
Vanguard FTSE All-World ex-US Index Fund ETF Shares			
<i>Based on NAV</i>			
Return Before Taxes	-15.46%	1.28%	4.06%
Return After Taxes on Distributions	-16.05	0.59	3.31
Return After Taxes on Distributions and Sale of Fund Shares	-8.69	0.99	3.12
<i>Based on Market Price</i>			
Return Before Taxes	-15.60	1.21	3.95
FTSE All-World ex US Index			
(reflects no deduction for fees or expenses)	-15.49%	1.28%	4.19%
FTSE Global All Cap ex US Index			
(reflects no deduction for fees or expenses)	-16.10	1.10	4.18

Actual after-tax returns depend on your tax situation and may differ from those shown in the preceding table. When after-tax returns are calculated, it is assumed that the shareholder was in the highest individual federal marginal income tax bracket at the time of each distribution of income or capital gains or upon redemption. State and local income taxes are not reflected in the calculations. Please note that after-tax returns are not relevant for a shareholder who holds fund shares in a tax-deferred account, such as an individual retirement account or a 401(k) plan. Also, figures captioned *Return After Taxes on Distributions and Sale of Fund Shares* may be higher than other figures for the same period if a capital loss occurs upon redemption and results in an assumed tax deduction for the shareholder.

Investment Advisor

The Vanguard Group, Inc. (Vanguard)

Portfolio Managers

Christine D. Franquin, Principal of Vanguard. She has co-managed the Fund since 2016.

Jeffrey D. Miller, Portfolio Manager at Vanguard. He has co-managed the Fund since July 2022.

Purchase and Sale of Fund Shares

ETF Shares may only be bought and sold in the secondary market through a brokerage firm. The price you pay or receive for ETF Shares will be the prevailing market price, which may be more (premium) or less (discount) than the NAV of the shares. The brokerage firm may charge you a commission to execute the transaction. Unless imposed by your brokerage firm, there is no minimum dollar amount you must invest and no minimum number of shares you must buy. ETF Shares of the Fund cannot be directly purchased from or redeemed with the Fund, except by certain authorized broker-dealers. These broker-dealers may purchase and redeem ETF Shares only in large blocks (Creation Units), typically in exchange for baskets of securities.

An investor may incur costs attributable to the difference between the highest price a buyer is willing to pay to purchase ETF Shares (bid) and the lowest price a seller is willing to accept for ETF Shares (ask) when buying or selling shares in the secondary market (bid-ask spread). Recent information, including information on the Fund's NAV, market price, premiums and discounts, and bid-ask spreads, is available online at *vanguard.com*.

Tax Information

The Fund's distributions may be taxable as ordinary income or capital gain. If you are investing through a tax-advantaged account, such as an IRA or an employer-sponsored retirement or savings plan, special tax rules apply.

Payments to Financial Intermediaries

The Fund and its investment advisor do not pay financial intermediaries for sales of Fund shares.

Investing in Vanguard ETF[®] Shares

What Are Vanguard ETF Shares?

Vanguard ETF Shares are an exchange-traded class of shares issued by certain Vanguard funds. ETF Shares represent an interest in the portfolio of stocks or bonds held by the issuing fund. This prospectus describes Vanguard FTSE All-World ex-US ETF, a class of shares issued by Vanguard FTSE All-World ex-US Index Fund. In addition to ETF Shares, the Fund offers three conventional (i.e., not exchange-traded) classes of shares. This prospectus, however, relates only to ETF Shares.

How Are Vanguard ETF Shares Different From Conventional Mutual Fund Shares?

Conventional mutual fund shares can be directly purchased from and redeemed with the issuing fund for cash at the net asset value (NAV), typically calculated once a day. ETF Shares, by contrast, cannot be purchased directly from or redeemed directly with the issuing fund by an individual investor. Rather, ETF Shares can only be purchased or redeemed directly from the issuing fund by certain authorized broker-dealers. These broker-dealers may purchase and redeem ETF Shares only in large blocks (Creation Units), usually in exchange for baskets of securities and not for cash (although some funds issue and redeem Creation Units in exchange for cash or a combination of cash and securities).

An organized secondary trading market is expected to exist for ETF Shares, unlike conventional mutual fund shares, because ETF Shares are listed for trading on a national securities exchange. Individual investors can purchase and sell ETF Shares on the secondary market through a broker. Secondary-market transactions occur not at NAV, but at market prices that are subject to change throughout the day based on the supply of and demand for ETF Shares, changes in the prices of the fund's portfolio holdings, and other factors.

The market price of a fund's ETF Shares typically will differ somewhat from the NAV of those shares. The difference between market price and NAV is expected to be small most of the time, but in times of market disruption or extreme market volatility, the difference may become significant.

How Do I Buy and Sell Vanguard ETF Shares?

ETF Shares of the Fund are listed for trading on NYSE Arca. You can buy and sell ETF Shares on the secondary market in the same way you buy and sell any other exchange-traded security—through a broker. Your broker may charge a commission to execute a transaction. You will also incur the cost of the “bid-ask spread,” which is the difference between the highest price a buyer is willing to pay to purchase ETF Shares (bid) and the lowest price a seller is willing to accept for ETF Shares (ask) when buying or selling shares in the secondary market. Because secondary-market transactions occur at market prices, you may pay

more (premium) or less (discount) than NAV when you buy ETF Shares and receive more or less than NAV when you sell those shares. In times of severe market disruption, the bid-ask spread and premiums/discounts can increase significantly. Unless imposed by your broker, there is no minimum dollar amount you must invest and no minimum number of ETF Shares you must buy.

Your ownership of ETF Shares will be shown on the records of the broker through which you hold the shares. Vanguard will not have any record of your ownership. Your account information will be maintained by your broker, which will provide you with account statements, confirmations of your purchases and sales of ETF Shares, and tax information. Your broker also will be responsible for ensuring that you receive income and capital gains distributions, as well as shareholder reports and other communications from the fund whose ETF Shares you own. You will receive other services (e.g., dividend reinvestment and average cost information) only if your broker offers these services.

Investing in Index Funds

What Is Indexing?

Indexing is an investment strategy for tracking the performance of a specified market benchmark, or “index.” An index is a group of securities whose overall performance is used as a standard to measure the investment performance of a particular market. There are many types of indexes. Some represent entire markets—such as the U.S. stock market or the U.S. bond market. Other indexes cover market segments—such as small-capitalization stocks or short-term bonds. One cannot invest directly in an index.


The index sponsor determines the securities to include in the index and the weighting of each security in the index. Under normal circumstances, the index sponsor will rebalance an index on a regular schedule. An index sponsor may carry out additional ad hoc index rebalances or delay or cancel a scheduled rebalance. Generally, the index sponsor does not provide any warranty, or accept any liability, with respect to the quality, accuracy, or completeness of either the target index or its related data. Errors made by the index sponsor may occur from time to time and may not be identified by the index sponsor for a period of time or at all. Vanguard does not provide any warranty or guarantee against such errors. Therefore, the gains, losses, or costs associated with the index sponsor’s errors will generally be borne by the index fund and its shareholders.

An index fund seeks to hold all, or a representative sample, of the securities that make up its target index. Index funds attempt to mirror the performance of the target index, for better or worse. However, an index fund generally does not perform *exactly* like its target index. For example, index funds have operating expenses and transaction costs. Market indexes do not, and therefore they will usually have a slight performance advantage over funds that track them. The ability of an index fund to match its performance to that of its target index can also be impacted by, among other things, the timing and size of cash flows, asset valuation differences, and the size of the fund. Market disruptions could also have an adverse effect on a fund’s ability to adjust its exposure to the required levels in order to track the index. The risk that a fund may not track the performance of its target index may be heightened during times of increased market volatility or other unusual market conditions.

Index funds typically have the following characteristics:

- *Variety of investments.* Depending on a fund’s benchmark index, the fund may invest in the securities of a variety of companies, industries, and/or governments or government agencies.
- *Relative performance consistency.* Because they seek to track market benchmarks, index funds usually do not perform dramatically better or worse than their benchmarks.
- *Low cost.* Index funds are generally inexpensive to run compared with actively managed funds. They have low or no research costs and typically keep trading activity—and thus brokerage commissions and other transaction costs—to a minimum compared with actively managed funds.

More on the Fund and ETF Shares

This prospectus describes the principal risks you would face as a Fund shareholder. It is important to keep in mind one of the main principles of investing: generally, the higher the risk of losing money, the higher the potential reward. The reverse, also, is generally true: the lower the risk, the lower the potential reward. As you consider an investment in any fund, you should take into account your personal tolerance for fluctuations in the securities markets. Look for this  symbol throughout the prospectus. It is used to mark detailed information about the more significant risks that you would confront as a Fund shareholder. To highlight terms and concepts important to fund investors, we have provided Plain Talk[®] explanations along the way. Reading the prospectus will help you decide whether the Fund is the right investment for you. We suggest that you keep this prospectus for future reference.

Share Class Overview

This prospectus offers the Fund's ETF Shares, an exchange-traded class of shares. A separate prospectus offers the Fund's Admiral[™] Shares, which generally have an investment minimum of \$3,000. Another prospectus offers the Fund's Institutional Shares and Institutional Plus Shares, which are generally for investors who invest a minimum of \$5 million and \$100 million, respectively.

All share classes offered by the Fund have the same investment objective, strategies, and policies. However, different share classes have different expenses; as a result, their investment returns will differ.

A Note to Investors

Vanguard ETF Shares can be purchased directly from the issuing Fund only by certain authorized broker-dealers in exchange for a basket of securities (or, in some cases, for cash or a combination of cash and securities). Individual investors generally will not be able to purchase ETF Shares directly from the Fund. Instead, these investors will purchase ETF Shares on the secondary market through a broker.

Plain Talk About Fund Expenses

All funds have operating expenses. These expenses, which are deducted from a fund's gross income, are expressed as a percentage of the net assets of the fund. Assuming that operating expenses remain as stated in the Fees and Expenses section, Vanguard FTSE All-World ex-US Index Fund ETF Shares' expense ratio would be 0.08%, or \$0.80 per \$1,000 of average net assets. The average expense ratio for international stock funds in 2021 was 1.23%, or \$12.30 per \$1,000 of average net assets (derived from data provided by Lipper, a Thomson Reuters Company, which reports on the fund industry).

Plain Talk About Costs of Investing

Costs are an important consideration in choosing an ETF. That is because you, as a shareholder, pay a proportionate share of the costs of operating a fund and any transaction costs incurred when the fund buys or sells securities. These costs can erode a substantial portion of the gross income or the capital appreciation a fund achieves. Even seemingly small differences in expenses can, over time, have a dramatic effect on a fund's performance.

The following sections explain the principal investment strategies and policies that the Fund uses in pursuit of its investment objective. The Fund's board of trustees, which oversees the Fund's management, may change investment strategies or policies in the interest of shareholders without a shareholder vote, unless those strategies or policies are designated as fundamental. Note that the Fund's investment objective is not fundamental and may be changed without a shareholder vote. Under normal circumstances, the Fund will invest at least 80% of its assets in the stocks that make up its target index. The Fund may change its 80% policy only upon 60 days' notice to shareholders.

Market Exposure

The Fund invests mainly in common stocks of companies located in developed and emerging markets around the world, excluding the United States. In seeking to track its target index, the Fund invests in stocks that are predominantly large-cap and, to a lesser extent, mid- and small-cap. Historically, small- and mid-cap stocks have been more volatile in price than—and at times have performed quite differently from—large-cap stocks. The stock prices of small and


mid-size companies tend to experience greater volatility because, among other things, these companies tend to be more sensitive to changing economic conditions.


Plain Talk About International Investing

U.S. investors who invest in foreign securities will encounter risks not typically associated with U.S. companies because foreign stock and bond markets operate differently from the U.S. markets. For instance, foreign companies and governments may not be subject to the same or similar auditing, legal, tax, regulatory, financial reporting, accounting, and recordkeeping standards and practices as U.S. companies and the U.S. government, and their stocks and bonds may not be as liquid as those of similar U.S. entities. In addition, foreign stock exchanges, brokers, companies, bond markets, and dealers may be subject to less government supervision and regulation than their counterparts in the United States. Further, the imposition of economic or other sanctions on the United States by a foreign country, or on a foreign country or issuer by the United States, could impair a fund's ability to buy, sell, hold, receive, deliver, or otherwise transact in certain investment securities or obtain exposure to foreign securities and assets. These factors, among others, could negatively affect the returns U.S. investors receive from foreign investments.



The Fund is subject to stock market risk, which is the chance that stock prices overall will decline. Stock markets tend to move in cycles, with periods of rising prices and periods of falling prices. The Fund's investments in foreign stocks can be riskier than U.S. stock investments. Foreign stocks may be more volatile and less liquid than U.S. stocks. The prices of foreign stocks and the prices of U.S. stocks may move in opposite directions. In addition, the Fund's target index may, at times, become focused in stocks of a particular market sector, which would subject the Fund to proportionately higher exposure to the risks of that sector.

 *The Fund is subject to country/regional risk and currency risk. Country/regional risk is the chance that world events—such as political upheaval, financial troubles, or natural disasters—will adversely affect the value of securities issued by companies in foreign countries or regions. Because the Fund may invest a large portion of its assets in securities of companies located in any one country or region, the Fund’s performance may be hurt disproportionately by the poor performance of its investments in that area. Currency risk is the chance that the value of a foreign investment, measured in U.S. dollars, will decrease because of unfavorable changes in currency exchange rates. Country/regional risk and currency risk are especially high in emerging markets.*

 *The Fund is subject to emerging markets risk, which is the chance that the stocks of companies located in emerging markets will be substantially more volatile, and substantially less liquid, than the stocks of companies located in more developed foreign markets because, among other factors, emerging markets can have greater custodial and operational risks; less developed legal, tax, regulatory, financial reporting, accounting, and recordkeeping systems; and greater political, social, and economic instability than developed markets. Additionally, information regarding companies located in emerging markets may be less available and less reliable, which can impede the ability to evaluate such companies.*

Market disruptions can adversely affect local and global markets as well as normal market conditions and operations. Any such disruptions could have an adverse impact on the value of the Fund’s investments and Fund performance.


Security Selection

The Fund attempts to track the investment performance of a benchmark index consisting of common stocks of companies located in developed and emerging markets around the world, excluding the United States. The companies in which the Fund invests will be within the capitalization range of the companies included in the FTSE All-World ex US Index (\$14 million to \$2 trillion as of October 31, 2022). In the future, the Index’s market capitalization range may be higher or lower, and the Fund’s investments may track a different index. Such changes may occur at any time and without notice to Fund shareholders.

Indexing Strategy. The Fund attempts to replicate the target index by investing all, or substantially all, of its assets in the stocks that make up the Index, holding each stock in approximately the same proportion as its weighting in the Index.

Depository receipts. The Fund, in most cases, will obtain economic exposure to stocks of its target index (component securities) by investing directly in the component securities. However, the Fund reserves the right to obtain economic

exposure to component securities indirectly by purchasing depositary receipts (also sold as participatory notes) of the component securities. Depositary receipts are securities that are listed on exchanges or quoted in over-the-counter markets in one country but represent shares of issuers domiciled in another country. Generally, the Fund will hold depositary receipts only when the advisor believes that the Fund would benefit from holding the depositary receipt, rather than the underlying component security. For example, the Fund might opt to hold depositary receipts if the foreign market in which a stock trades does not provide adequate protection to the rights of foreign investors or if government regulators place restrictions on the free flow of capital or currency. The Fund treats depositary receipts that represent interests in component securities as component securities for purposes of any requirements related to the percentage of component securities held in the Fund's portfolio.

 ***The Fund is subject to index replicating risk, which is the chance that the Fund may be prevented from holding one or more securities in the same proportion as in its target index.***

The ability of the advisor to purchase or dispose of certain Fund investments is or may be restricted or impaired because of limitations imposed by law, regulation, or by certain regulators or issuers. As a result, the advisor may be required to limit purchases or sell existing investments. If a Fund is required to limit its investment in a particular issuer, then the Fund may seek to obtain regulatory relief or ownership waivers. Other options a Fund may pursue include seeking to obtain economic exposure to that issuer through alternative means, such as through a derivative or through investment in a wholly owned subsidiary, both of which may be more costly than owning securities of the issuer directly. Ownership restrictions and limitations could result in unanticipated tax consequences to a Fund that may affect the amount, timing, and character of distributions to shareholders. See *Other Investment Policies and Risks* for further information related to derivatives.

The FTSE All-World ex US Index. The FTSE All-World ex US Index is maintained by FTSE Group (FTSE), a widely known global index provider.

Other Investment Policies and Risks

The Fund reserves the right to substitute a different index for the index it currently tracks if the current index is discontinued, if the Fund's agreement with the sponsor of its target index is terminated, or for any other reason determined in good faith by the Fund's board of trustees. In any such instance, the substitute index would represent the same market segment as the current index.

The Fund may invest, to a limited extent, in equity futures and options contracts, warrants, convertible securities, and swap agreements, all of which are types of derivatives. Generally speaking, a derivative is a financial contract whose value is based on the value of a financial asset (such as a stock, a bond, or a currency), a physical asset (such as gold, oil, or wheat), a market index, or a reference rate. Investments in derivatives may subject the Fund to risks different from, and possibly greater than, those of investments directly in the underlying securities or assets. The Fund will not use derivatives for speculation or for the purpose of leveraging (magnifying) investment returns.

The Fund may enter into foreign currency exchange forward contracts, which are a type of derivative, in order to maintain the same currency exposure as its target index. A foreign currency exchange forward contract is an agreement to buy or sell a currency at a specific price on a specific date, usually 30, 60, or 90 days in the future. In other words, the contract guarantees an exchange rate on a given date. These contracts, however, would not prevent the Fund's securities from falling in value as a result of risks other than unfavorable currency exchange movements. The Fund may use these contracts to manage currency exposure and to settle trades in a foreign currency.

Cash Management

The Fund's daily cash balance may be invested in Vanguard Market Liquidity Fund and/or Vanguard Municipal Cash Management Fund (each, a CMT Fund), which are low-cost money market funds. When investing in a CMT Fund, the Fund bears its proportionate share of the expenses of the CMT Fund in which it invests. Vanguard receives no additional revenue from Fund assets invested in a CMT Fund.

Redemption Requests

Methods used to meet redemption requests. Redemptions of ETF Shares are typically met through a combination of cash and securities held by the Fund; see "How Are Vanguard ETF Shares Different From Conventional Mutual Fund Shares?" If cash is used to meet redemptions, the Fund typically obtains such cash through positive cash flows or the sale of Fund holdings consistent with the Fund's investment objective and strategy. Please consult the Fund's *Statement of Additional Information* for further information on redemptions of ETF Shares.


Under certain circumstances, the Fund may borrow money (subject to certain regulatory conditions and if available under board-approved procedures) through an interfund lending facility; through a bank line-of-credit, including a joint committed credit facility; or through an uncommitted line-of-credit from Vanguard in order to meet redemption requests.


Potential redemption activity impacts. At times, the Fund may experience adverse effects when certain large shareholders, or multiple shareholders comprising significant ownership of the Fund, redeem large amounts of shares of the Fund. Large redemptions may cause the Fund to sell portfolio securities at times when it would not otherwise do so. This may result in the Fund distributing capital gains or other taxable income to non-redeeming shareholders. Large redemptions may also increase the Fund's transaction costs. Redemption activity can occur for many reasons, including shareholder reactions to market movements or other events unrelated to Vanguard's actions, or when Vanguard makes product changes that, for example, may result in a shareholder redeeming shares of the Fund to purchase shares of another similar fund or investment vehicle.

Temporary Investment Measures

The Fund may temporarily depart from its normal investment policies and strategies when the advisor believes that doing so is in the Fund's best interest, so long as the strategy or policy employed is consistent with the Fund's investment objective. For instance, the Fund may invest beyond its normal limits in derivatives or exchange-traded funds that are consistent with the Fund's investment objective when those instruments are more favorably priced or provide needed liquidity, as might be the case when the Fund receives large cash flows that it cannot prudently invest immediately.


Special Risks of Exchange-Traded Shares


 **ETF Shares are not individually redeemable.** They can be redeemed with the issuing Fund at NAV only by certain authorized broker-dealers and only in large blocks known as Creation Units. Consequently, if you want to liquidate some or all of your ETF Shares, you must sell them on the secondary market at prevailing market prices.

 **The market price of ETF Shares may differ from NAV.** Although it is expected that the market price of an ETF Share typically will approximate its NAV, there may be times when the market price and the NAV differ significantly. Thus, you may pay more (premium) or less (discount) than NAV when you buy ETF Shares on the secondary market, and you may receive more or less than NAV when you sell those shares. These discounts and premiums are likely to be greatest during times of market disruption or extreme market volatility.

Vanguard's website at vanguard.com shows the previous day's closing NAV and closing market price for the Fund's ETF Shares. The website also discloses, in the **Premium/Discount Analysis** section of the ETF Shares' Price &

Performance page, how frequently the Fund's ETF Shares traded at a premium or discount to NAV (based on closing NAVs and market prices) and the magnitudes of such premiums and discounts.

 **An active trading market may not exist.** Although Vanguard ETF Shares are listed on a national securities exchange, it is possible that an active trading market may not be maintained. Although this could happen at any time, it is more likely to occur during times of severe market disruption. If you attempt to sell your ETF Shares when an active trading market is not functioning, you may have to sell at a significant discount to NAV. In extreme cases, you may not be able to sell your shares at all.

 **Trading may be halted.** Trading of Vanguard ETF Shares on an exchange may be halted by the activation of individual or marketwide trading halts (which halt trading for a specific period of time when the price of a particular security or overall market prices decline by a specified percentage). Trading of ETF Shares may also be halted if (1) the shares are delisted from the listing exchange without first being listed on another exchange or (2) exchange officials determine that such action is appropriate in the interest of a fair and orderly market or for the protection of investors.

Conversion Privilege

Owners of conventional shares issued by the Fund may convert those shares to ETF Shares of equivalent value of the same fund. Please note that investors who own conventional shares through a 401(k) plan or other employer-sponsored retirement or benefit plan generally may not convert those shares to ETF Shares and should check with their plan sponsor or recordkeeper. ETF Shares, whether acquired through a conversion or purchased on the secondary market, cannot be converted to conventional shares by a shareholder. Also, ETF Shares of one fund cannot be exchanged for ETF Shares of another fund.

You must hold ETF Shares in a brokerage account. Thus, before converting conventional shares to ETF Shares, you must have an existing, or open a new, brokerage account. This account may be with Vanguard Brokerage Services[®] or with any other brokerage firm. To initiate a conversion of conventional shares to ETF Shares, please contact your broker.

Vanguard Brokerage Services does not impose a fee on conversions from Vanguard conventional shares to Vanguard ETF Shares. However, other brokerage firms may charge a fee to process a conversion. Vanguard reserves the right, in the future, to impose a transaction fee on conversions or to limit, temporarily suspend, or terminate the conversion privilege.

Converting conventional shares to ETF Shares is generally accomplished as follows. First, after your broker notifies Vanguard of your request to convert, Vanguard will transfer your conventional shares from your account to the broker's omnibus account with Vanguard (an account maintained by the broker on behalf of all its customers who hold conventional Vanguard fund shares through the broker). After the transfer, Vanguard's records will reflect your broker, not you, as the owner of the shares. Next, your broker will instruct Vanguard to convert the appropriate number or dollar amount of conventional shares in its omnibus account to ETF Shares of equivalent value, based on the respective NAVs of the two share classes.

Your Fund's transfer agent will reflect ownership of all ETF Shares in the name of the Depository Trust Company (DTC). The DTC will keep track of which ETF Shares belong to your broker, and your broker, in turn, will keep track of which ETF Shares belong to you.

Because the DTC is unable to handle fractional shares, only whole shares can be converted. For example, if you owned 300.25 conventional shares, and this was equivalent in value to 90.75 ETF Shares, the DTC account would receive 90 ETF Shares. Conventional shares with a value equal to 0.75 ETF Shares (in this example, that would be 2.481 conventional shares) would remain in the broker's omnibus account with Vanguard. Your broker then could either (1) credit your account with 0.75 ETF Shares or (2) redeem the 2.481 conventional shares for cash at NAV and deliver that cash to your account. If your broker chose to redeem your conventional shares, you would realize a gain or loss on the redemption that must be reported on your tax return (unless you hold the shares in an IRA or other tax-deferred account). Please consult your broker for information on how it will handle the conversion process, including whether it will impose a fee to process a conversion.

If you convert your conventional shares to ETF Shares through Vanguard Brokerage Services, *all* conventional shares for which you request conversion will be converted to ETF Shares of equivalent value. Because no fractional shares will have to be sold, the transaction will not be taxable.

Here are some important points to keep in mind when converting conventional shares of a Vanguard fund to ETF Shares:

- The conversion process can take anywhere from several days to several weeks, depending on your broker. Vanguard generally will process conversion requests either on the day they are received or on the next business day. Vanguard imposes conversion blackout windows around the dates when a fund with ETF Shares declares dividends. This is necessary to prevent a shareholder

from collecting a dividend from both the conventional share class currently held and also from the ETF share class to which the shares will be converted.

- Until the conversion process is complete, you will remain fully invested in a fund's conventional shares, and your investment will increase or decrease in value in tandem with the NAV of those shares.
- The conversion transaction is nontaxable except, if applicable, to the very limited extent previously described.

A precautionary note to investment companies: The Fund's ETF Shares are issued by a registered investment company, and therefore the acquisition of such shares by other investment companies and private funds is subject to the restrictions of Section 12(d)(1) of the Investment Company Act of 1940 (the 1940 Act). SEC Rule 12d1-4 under the 1940 Act permits registered investment companies to invest in other registered investment companies beyond the limits in Section 12(d)(1), subject to certain conditions, including that funds with different investment advisors must enter into a fund of funds investment agreement.

Shareholder Rights

The Fund's Agreement and Declaration of Trust, as amended, requires a shareholder bringing a derivative action on behalf of Vanguard International Equity Index Funds (the Trust) that is subject to a pre-suit demand to collectively hold at least 10% of the outstanding shares of the Trust or at least 10% of the outstanding shares of the series or class to which the demand relates and to undertake to reimburse the Trust for the expense of any counsel or advisors used when considering the merits of the demand in the event that the board of trustees determines not to bring such action. In each case, these requirements do not apply to claims arising under the federal securities laws to the extent that any such federal securities laws, rules, or regulations do not permit such application.

Frequent Trading and Market-Timing

Unlike frequent trading of a Vanguard fund's conventional (i.e., not exchange-traded) classes of shares, frequent trading of ETF Shares does not disrupt portfolio management or otherwise harm fund shareholders. The vast majority of trading in ETF Shares occurs on the secondary market. Because these trades do not involve the issuing fund, they do not harm the fund or its shareholders. Certain broker-dealers are authorized to purchase and redeem ETF Shares directly with the issuing fund. Because these trades typically are effected in kind (i.e., for securities and not for cash), or are assessed a transaction fee when effected in cash, they do not cause any of the harmful effects to the issuing fund (as previously noted) that may result from frequent trading. For

these reasons, the board of trustees of each fund that issues ETF Shares has determined that it is not necessary to adopt policies and procedures to detect and deter frequent trading and market-timing of ETF Shares.

Portfolio Holdings

Please consult the Fund's *Statement of Additional Information* or our website for a description of the policies and procedures that govern disclosure of the Fund's portfolio holdings.

Turnover Rate

Although the Fund generally seeks to invest for the long term, it may sell securities regardless of how long they have been held. Generally, an index fund sells securities in response to redemption requests from shareholders of conventional (i.e., not exchange-traded) shares or to changes in the composition of its target index. The **Financial Highlights** section of this prospectus shows historical turnover rates for the Fund. A turnover rate of 100%, for example, would mean that the Fund had sold and replaced securities valued at 100% of its net assets within a one-year period. In general, the greater the turnover rate, the greater the impact transaction costs will have on a fund's return. Also, funds with high turnover rates may be more likely to generate capital gains, including short-term capital gains, that must be distributed to shareholders and will be taxable to shareholders investing through a taxable account.

The Fund and Vanguard

The Fund is a member of The Vanguard Group, Inc. (Vanguard), a family of over 200 funds. All of the funds that are members of Vanguard (other than funds of funds) share in the expenses associated with administrative services and business operations, such as personnel, office space, and equipment.

Vanguard Marketing Corporation provides marketing services to the funds. Although fund shareholders do not pay sales commissions or 12b-1 distribution fees, each fund (other than a fund of funds) or each share class of a fund (in the case of a fund with multiple share classes) pays its allocated share of the Vanguard funds' marketing costs.

Plain Talk About Vanguard's Unique Corporate Structure

Vanguard is owned jointly by the funds it oversees and thus indirectly by the shareholders in those funds. Most other mutual funds are operated by management companies that are owned by third parties—either public or private stockholders—and not by the funds they serve.

Investment Advisor

The Vanguard Group, Inc., P.O. Box 2600, Valley Forge, PA 19482, which began operations in 1975, serves as advisor to the Fund through its Equity Index Group. As of October 31, 2022, Vanguard served as advisor for approximately \$5.9 trillion in assets. Vanguard provides investment advisory services to the Fund pursuant to the Funds' Service Agreement and subject to the supervision and oversight of the trustees and officers of the Fund.

For the fiscal year ended October 31, 2022, the advisory expenses represented an effective annual rate of less than 0.01% of the Fund's average net assets.

Under the terms of an SEC exemption, the Fund's board of trustees may, without prior approval from shareholders, change the terms of an advisory agreement with a third-party investment advisor or hire a new third-party investment advisor—either as a replacement for an existing advisor or as an additional advisor. Any significant change in the Fund's advisory arrangements will be communicated to shareholders in writing. As the Fund's sponsor and overall manager, Vanguard may provide investment advisory services to the Fund at any time. Vanguard may also recommend to the board of trustees that an advisor be hired, terminated, or replaced or that the terms of an existing advisory agreement be revised. The Fund has filed an application seeking a similar SEC exemption with respect to investment advisors that are wholly owned subsidiaries of Vanguard. If the exemption is granted, the Fund may rely on the new SEC relief.

For a discussion of why the board of trustees approved the Fund's investment advisory arrangement, see the most recent semiannual report to shareholders covering the fiscal period ended April 30.

The managers primarily responsible for the day-to-day management of the Fund are:

Christine D. Franquin, Principal of Vanguard. She has managed investment portfolios since joining Vanguard in 2000 and has co-managed the Fund since 2016. Education: B.A., Universitaire Faculteiten Sint-Ignatius Antwerpen, Belgium; J.D., University of Liege, Belgium; M.S., Clark University.

Jeffrey D. Miller, Portfolio Manager at Vanguard. He has been with Vanguard since 1999, has managed investment portfolios since 2010, and has co-managed the Fund since July 2022. Education: B.A., The Pennsylvania State University; M.B.A., Drexel University.

The Fund's *Statement of Additional Information* provides information about each portfolio manager's compensation, other accounts under management, and ownership of shares of the Fund.

Dividends, Capital Gains, and Taxes

Fund Distributions

The Fund distributes to shareholders virtually all of its net income (interest and dividends, less expenses) as well as any net short-term or long-term capital gains realized from the sale of its holdings. From time to time, the Fund may also make distributions that are treated as a return of capital. Income dividends generally are distributed quarterly in March, June, September, and December; capital gains distributions, if any, generally occur annually in December. In addition, the Fund may occasionally make a supplemental distribution at some other time during the year.

From time to time, the Fund may pay out higher-than-expected distributions. As an index fund, the Fund must adjust its holdings to reflect changes in its target index. In some cases, such changes may force an index fund to sell securities that have appreciated in value, thereby realizing a capital gain that must be distributed to shareholders. A security may move out of an index for a number of reasons, including a merger or acquisition, a substantial change in the market capitalization of the issuer, or the movement of a country from emerging market to developed market status.

Plain Talk About Distributions

As a shareholder, you are entitled to your portion of a fund's income from interest and dividends as well as capital gains from the fund's sale of investments. Income consists of both the dividends that the fund earns from any stock holdings and the interest it receives from any money market and bond investments. Capital gains are realized whenever the fund sells securities for higher prices than it paid for them. These capital gains are either short-term or long-term, depending on whether the fund held the securities for one year or less or for more than one year.

Reinvestment of Distributions

In order to reinvest dividend and capital gains distributions, investors in the Fund's ETF Shares must hold their shares at a broker that offers a reinvestment service. This can be the broker's own service or a service made available by a third party, such as the broker's outside clearing firm or the Depository Trust Company (DTC). If a reinvestment service is available, distributions of income and capital gains can automatically be reinvested in additional whole and fractional ETF Shares of the Fund. If a reinvestment service is not available, investors will receive their distributions in cash. To determine whether a reinvestment service is available and whether there is a commission or other charge for using this service, consult your broker.

As with all exchange-traded funds, reinvestment of dividend and capital gains distributions in additional ETF Shares will occur four business days or more after the ex-dividend date (the date when a distribution of dividends or capital gains is deducted from the price of the Fund's shares). The exact number of days depends on your broker. During that time, the amount of your distribution will not be invested in the Fund and therefore will not share in the Fund's income, gains, and losses.

Basic Tax Points

Investors in taxable accounts should be aware of the following basic federal income tax points:

- Distributions are taxable to you whether or not you reinvest these amounts in additional ETF Shares.
- Distributions declared in December—if paid to you by the end of January—are taxable as if received in December.
- Any dividend distribution or short-term capital gains distribution that you receive is taxable to you as ordinary income. If you are an individual and meet

certain holding-period requirements with respect to your ETF Shares, you may be eligible for reduced tax rates on “qualified dividend income,” if any, or a special tax deduction on “qualified REIT dividends,” if any, distributed by the Fund.

- Any distribution of net long-term capital gains is taxable to you as long-term capital gains, no matter how long you have owned ETF Shares.
- Capital gains distributions may vary considerably from year to year as a result of the Fund’s normal investment activities and cash flows.
- Your cost basis in the Fund will be decreased by the amount of any return of capital that you receive. This, in turn, will affect the amount of any capital gain or loss that you realize when selling your ETF Shares.
- Return of capital distributions generally are not taxable to you until your cost basis has been reduced to zero. If your cost basis is at zero, return of capital distributions will be treated as capital gains.
- A sale of ETF Shares is a taxable event. This means that you may have a capital gain to report as income, or a capital loss to report as a deduction, when you complete your tax return.

Individuals, trusts, and estates whose income exceeds certain threshold amounts are subject to a 3.8% Medicare contribution tax on “net investment income.” Net investment income takes into account distributions paid by the Fund and capital gains from any sale of ETF Shares.

Dividend distributions and capital gains distributions that you receive, as well as your gains or losses from any sale of ETF Shares, may be subject to state and local income taxes.

The Fund may be subject to foreign taxes or foreign tax withholding on dividends, interest, and some capital gains that it receives on foreign securities. If at the end of the taxable year more than 50% of the value of the Fund’s assets consists of securities of foreign corporations, and the Fund makes a special election, you will generally be required to include in your income, for U.S. federal income tax purposes, your share of the qualifying foreign income taxes paid by the Fund in respect of its foreign portfolio securities. There is no assurance that the Fund will make this election for a taxable year, even if it is eligible to do so. You may qualify for an offsetting credit or deduction under U.S. tax laws for any amount designated as your portion of the Fund’s foreign tax obligations, provided that you meet certain requirements. See your tax advisor or IRS publications for more information.

This prospectus provides general tax information only. If you are investing through a tax-advantaged account, such as an IRA or an employer-sponsored retirement or savings plan, special tax rules apply. Please consult your tax advisor for detailed information about any tax consequences for you.

Share Price and Market Price

Share price, also known as *net asset value* (NAV), is calculated as of the close of regular trading on the New York Stock Exchange (NYSE), generally 4 p.m., Eastern time, on each day that the NYSE is open for business (a business day). In the rare event the NYSE experiences unanticipated disruptions and is unavailable at the close of the trading day, NAVs will be calculated as of the close of regular trading on the Nasdaq (or another alternate exchange if the Nasdaq is unavailable, as determined at Vanguard's discretion), generally 4 p.m., Eastern time. Each share class has its own NAV, which is computed by dividing the total assets, minus liabilities, allocated to the share class by the number of Fund shares outstanding for that class. On U.S. holidays or other days when the NYSE is closed, the NAV is not calculated, and the Fund does not sell or redeem shares. However, on those days the value of the Fund's assets may be affected to the extent that the Fund holds securities that change in value on those days (such as foreign securities that trade on foreign markets that are open).

Remember: If you buy or sell ETF Shares on the secondary market, you will pay or receive the market price, which may be higher or lower than NAV. Your transaction will be priced at NAV only if you purchase or redeem your ETF Shares in Creation Unit blocks (an option available only to certain authorized broker-dealers) or if you convert your conventional fund shares to ETF Shares.

Stocks held by a Vanguard fund are valued at their *market value* when reliable market quotations are readily available from the principal exchange or market on which they are traded. Such securities are generally valued at their official closing price, the last reported sales price, or if there were no sales that day, the mean between the closing bid and asking prices. When a fund determines that market quotations either are not readily available or do not accurately reflect the value of a security, the security is priced at its *fair value* (the amount that the owner might reasonably expect to receive upon the current sale of the security).

The values of any foreign securities held by a fund are converted into U.S. dollars using an exchange rate obtained from an independent third party as of the close of regular trading on the NYSE. The values of any mutual fund shares, including institutional money market fund shares, held by a fund are based on the NAVs of the shares. The values of any ETF shares or closed-end fund shares held by a fund are based on the market value of the shares.

A fund also will use fair-value pricing if the value of a security it holds has been materially affected by events occurring before the fund's pricing time but after the close of the principal exchange or market on which the security is traded. This most commonly occurs with foreign securities, which may trade on foreign exchanges that close many hours before the fund's pricing time. Intervening events might be company-specific (e.g., earnings report, merger announcement) or country-specific or regional/global (e.g., natural disaster, economic or political news, interest rate change, act of terrorism). Intervening events include price movements in U.S. markets that exceed a specified threshold or that are otherwise deemed to affect the value of foreign securities.

Fair-value pricing may be used for domestic securities—for example, if (1) trading in a security is halted and does not resume before the fund's pricing time or a security does not trade in the course of a day and (2) the fund holds enough of the security that its price could affect the NAV.

Fair-value prices are determined by Vanguard according to procedures adopted by the board of trustees. When fair-value pricing is employed, the prices of securities used by a fund to calculate the NAV may differ from quoted or published prices for the same securities.

The Fund has authorized certain financial intermediaries and their designees and may, from time to time, authorize certain funds of funds for which Vanguard serves as the investment advisor (Vanguard Funds of Funds), to accept orders to buy or sell fund shares on its behalf. The Fund will be deemed to receive an order when accepted by the financial intermediary, its designee, or one of the Vanguard Funds of Funds, and the order will receive the NAV next computed by the Fund after such acceptance.

Vanguard's website will show the previous day's closing NAV and closing market price for the Fund's ETF Shares.

Additional Information

The Fund's Bylaws require, unless the Trust otherwise consents in writing, that the U.S. Federal District Courts be the sole and exclusive forum for the resolution of complaints under the Securities Act of 1933. This provision may limit a shareholder's ability to bring a claim in a different forum and may result in increased shareholder costs in pursuing such a claim.

Vanguard Fund	Inception Date	Vanguard Fund Number	CUSIP Number
Vanguard FTSE All-World ex-US Index Fund			
ETF Shares	3/2/2007	991	922042775

Certain affiliates of the Fund and the advisor may purchase and resell ETF Shares pursuant to the prospectus.

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Financial Highlights

Financial highlights information is intended to help you understand a fund's performance for the past five years (or, if shorter, its period of operations). Certain information reflects financial results for a single fund share. Total return represents the rate that an investor would have earned or lost each period on an investment in a fund or share class (assuming reinvestment of all distributions). This information has been obtained from the financial statements audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, whose report, along with fund financial statements, is included in a fund's most recent annual report to shareholders. You may obtain a free copy of a fund's latest annual or semiannual report, which is available upon request.

Vanguard FTSE All-World ex-US Index Fund ETF Shares

For a Share Outstanding Throughout Each Period	Year Ended October 31,				
	2022	2021	2020	2019	2018
Net Asset Value, Beginning of Period	\$62.49	\$49.33	\$51.58	\$47.79	\$53.65
Investment Operations					
Net Investment Income ¹	1.749	1.604	1.211	1.629	1.557
Net Realized and Unrealized Gain (Loss) on Investments	(16.658)	13.047	(2.166)	3.692	(5.911)
Total from Investment Operations	(14.909)	14.651	(.955)	5.321	(4.354)
Distributions					
Dividends from Net Investment Income	(1.791)	(1.491)	(1.295)	(1.531)	(1.506)
Distributions from Realized Capital Gains	—	—	—	—	—
Total Distributions	(1.791)	(1.491)	(1.295)	(1.531)	(1.506)
Net Asset Value, End of Period	\$45.79	\$62.49	\$49.33	\$51.58	\$47.79
Total Return	-24.27%	29.82%	-1.83%	11.42%	-8.37%
Ratios/Supplemental Data					
Net Assets, End of Period (Millions)	\$29,524	\$35,493	\$24,308	\$24,652	\$21,348
Ratio of Total Expenses to Average Net Assets	0.08% ²	0.07%	0.08%	0.08%	0.09%
Ratio of Net Investment Income to Average Net Assets	3.22%	2.62%	2.46%	3.30%	2.91%
Portfolio Turnover Rate ³	3%	5%	4%	4%	6%

1 Calculated based on average shares outstanding.

2 The ratio of expenses to average net assets for the period net of reduction from custody fee offset arrangements was 0.08%.

3 Excludes the value of portfolio securities received or delivered as a result of in-kind purchases or redemptions of the fund's capital shares, including ETF Creation Units.

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Glossary of Investment Terms

Authorized Participant. Institutional investors that are permitted to purchase Creation Units directly from, and redeem Creation Units directly with, the issuing fund. To be an Authorized Participant, an entity must be a participant in the Depository Trust Company and must enter into an agreement with the fund's Distributor.

Bid-Ask Spread. The difference between the highest price a buyer is willing to pay to purchase ETF Shares (bid) and the lowest price a seller is willing to accept for ETF Shares (ask) when buying or selling shares in the secondary market.

Capital Gains Distributions. Payments to fund shareholders of gains realized on securities that a fund has sold at a profit, minus any realized losses.

Common Stock. A security representing ownership rights in a corporation.

Creation Unit. A large block of a specified number of ETF Shares. Certain broker-dealers known as "Authorized Participants" may purchase and redeem ETF Shares from the issuing fund in Creation Unit size blocks.

Dividend Distributions. Payments to fund shareholders of income from interest or dividends generated by a fund's investments.

Ex-Dividend Date. The date when a distribution of dividends and/or capital gains is deducted from the share price of a mutual fund, ETF, or stock. On the ex-dividend date, the share price drops by the amount of the distribution per share (plus or minus any market activity).

Expense Ratio. A fund's total annual operating expenses expressed as a percentage of the fund's average net assets. The expense ratio includes management and administrative expenses, but it does not include the transaction costs of buying and selling portfolio securities.

FTSE Global All Cap ex US Index. An index consisting of large-, mid-, and small-cap stocks globally, excluding the U.S. The index is derived from the FTSE Global Equity Index Series (GEIS), which covers approximately 98% of the world's investable market capitalization.

Inception Date. The date on which the assets of a fund (or one of its share classes) are first invested in accordance with the fund's investment objective. For funds with a subscription period, the inception date is the day after that period ends. Investment performance is generally measured from the inception date.

Indexing. A low-cost investment strategy in which a fund attempts to track—rather than outperform—a specified market benchmark, or “index.”

Joint Committed Credit Facility. The Fund participates, along with other funds managed by Vanguard, in a committed credit facility provided by a syndicate of lenders pursuant to a credit agreement that may be renewed annually; each Vanguard fund is individually liable for its borrowings, if any, under the credit facility. The amount and terms of the committed credit facility are subject to approval by the Fund’s board of trustees and renegotiation with the lender syndicate on an annual basis.

Mutual Fund. An investment company that pools the money of many people and invests it in a variety of securities in an effort to achieve a specific objective over time.

New York Stock Exchange (NYSE). A stock exchange based in New York City that is open for regular trading on business days, Monday through Friday, from 9:30 a.m. to 4 p.m., Eastern time.

Return of Capital. A return of capital occurs when a fund’s distributions exceed its earnings in a fiscal year. A return of capital is a return of all or part of your original investment or amounts paid in excess of your original investment in a fund. In general, a return of capital reduces your cost basis in a fund’s shares and is not taxable to you until your cost basis has been reduced to zero.

Securities. Stocks, bonds, money market instruments, and other investments.

Total Return. A percentage change, over a specified time period, in a fund’s net asset value, assuming the reinvestment of all distributions of dividends and capital gains.

Volatility. The fluctuations in value of a mutual fund or other security. The greater a fund’s volatility, the wider the fluctuations in its returns.

Yield. Income (interest or dividends) earned by an investment, expressed as a percentage of the investment’s price.

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For More Information

If you would like more information about Vanguard FTSE All-World ex-US ETF, the following documents are available free upon request:

Annual/Semiannual Reports to Shareholders

Additional information about the Fund's investments is available in the Fund's annual and semiannual reports to shareholders. In the annual report, you will find a discussion of the market conditions and investment strategies that significantly affected the Fund's performance during its last fiscal year.

Statement of Additional Information (SAI)

The SAI provides more detailed information about the Fund's ETF Shares and is incorporated by reference into (and thus legally a part of) this prospectus.

To receive a free copy of the latest annual or semiannual report or the SAI, or to request additional information about Vanguard ETF Shares, please visit vanguard.com or contact us as follows:

Telephone: 866-499-8473; Text telephone for people with hearing impairment: 800-749-7273

Information Provided by the SEC

Reports and other information about the Fund are available in the EDGAR database on the SEC's website at sec.gov, or you can receive copies of this information, for a fee, by electronic request at the following email address: publicinfo@sec.gov.

Fund's Investment Company Act file number: 811-05972

PART B
VANGUARD® INTERNATIONAL EQUITY INDEX FUNDS
STATEMENT OF ADDITIONAL INFORMATION

February 27, 2023

This Statement of Additional Information is not a prospectus but should be read in conjunction with a Fund's current prospectus (dated February 27, 2023). To obtain, without charge, a prospectus or the most recent Annual Report to Shareholders, which contains the Fund's [financial statements](#) as hereby incorporated by reference, please contact The Vanguard Group, Inc. (Vanguard).

Phone: Investor Information Department at 800-662-7447
Online: vanguard.com

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DESCRIPTION OF THE TRUST

Vanguard International Equity Index Funds (the Trust) currently offers the following funds and share classes (identified by ticker symbol):

Vanguard Fund²	Share Classes¹				
	Investor	Admiral	Institutional	Institutional Plus	ETF
Vanguard European Stock Index Fund ³	VEURX	VEUSX	VESIX	VEUPX	VGK ⁶
Vanguard Pacific Stock Index Fund ⁴	VPACX	VPADX	VPKIX	—	VPL ⁶
Vanguard Emerging Markets Stock Index Fund ⁵	VEIEX	VEMAX	VEMIX	VEMRX	VWO ⁶
Vanguard FTSE All-World ex-US Index Fund	—	VFWAX	VFWSX	VFWPX	VEU ⁶
Vanguard Total World Stock Index Fund	—	VTWAX	VTWIX	—	VT ⁶
Vanguard FTSE All-World ex-US Small-Cap Index Fund	—	VFSAX	VFSNX	—	VSS ⁶
Vanguard Global ex-U.S. Real Estate Index Fund	—	VGRLX	VGRNX	—	VNQI ⁶

1 Individually, a class; collectively, the classes.

2 Individually, a Fund; collectively, the Funds.

3 The ETF Share class is known as Vanguard FTSE Europe ETF.

4 The ETF Share class is known as Vanguard FTSE Pacific ETF.

5 The ETF Share class is known as Vanguard FTSE Emerging Markets ETF.

6 Exchange: NYSE Arca.

The Trust has the ability to offer additional funds or classes of shares. There is no limit on the number of full and fractional shares that may be issued for a single fund or class of shares.

Organization

The Trust was organized as a Maryland corporation in 1989, and was reorganized as a Delaware statutory trust in 1998. Prior to its reorganization as a Delaware statutory trust, the Trust was known as Vanguard International Equity Index Fund, Inc. The Trust is registered with the United States Securities and Exchange Commission (SEC) under the Investment Company Act of 1940 (the 1940 Act) as an open-end management investment company. All Funds within the Trust are classified as diversified within the meaning of the 1940 Act.

Service Providers

Custodian. Bank of New York Mellon, 240 Greenwich Street, New York, NY 10286 (for the European Stock Index, Pacific Stock Index, FTSE All-World ex-US Index, and FTSE All-World ex-US Small-Cap Index Funds); JPMorgan Chase Bank, N.A., 383 Madison Avenue, New York, NY 10179 (for the Emerging Markets Stock Index Fund); and State Street Bank and Trust Company, One Lincoln Street, Boston, MA 02111 (for the Total World Stock Index and Global ex-U.S. Real Estate Index Funds) serve as the Funds' custodians. The custodians are responsible for maintaining the Funds' assets, keeping all necessary accounts and records of Fund assets, and appointing any foreign subcustodians or foreign securities depositories.

Independent Registered Public Accounting Firm. PricewaterhouseCoopers LLP, Two Commerce Square, Suite 1800, 2001 Market Street, Philadelphia, PA 19103-7042, serves as the Funds' independent registered public accounting firm. The independent registered public accounting firm audits the Funds' annual financial statements and provides other related services.

Transfer and Dividend-Paying Agent. The Funds' transfer agent and dividend-paying agent is Vanguard, P.O. Box 2600, Valley Forge, PA 19482.

Characteristics of the Funds' Shares

Restrictions on Holding or Disposing of Shares. There are no restrictions on the right of shareholders to retain or dispose of a Fund's shares, other than those described in the Fund's current prospectus and elsewhere in this Statement of Additional Information. Each Fund or class may be terminated by reorganization into another mutual fund or class or by liquidation and distribution of the assets of the Fund or class. Unless terminated by reorganization or liquidation, each Fund and share class will continue indefinitely.

Shareholder Liability. The Trust is organized under Delaware law, which provides that shareholders of a statutory trust are entitled to the same limitations of personal liability as shareholders of a corporation organized under Delaware law. This means that a shareholder of a Fund generally will not be personally liable for payment of the Fund's debts. Some state courts, however, may not apply Delaware law on this point. We believe that the possibility of such a situation arising is remote.

Dividend Rights. The shareholders of each class of a Fund are entitled to receive any dividends or other distributions declared by the Fund for each such class. No shares of a Fund have priority or preference over any other shares of the Fund with respect to distributions. Distributions will be made from the assets of the Fund and will be paid ratably to all shareholders of a particular class according to the number of shares of the class held by shareholders on the record date. The amount of dividends per share may vary between separate share classes of the Fund based upon differences in the net asset values of the different classes and differences in the way that expenses are allocated between share classes pursuant to a multiple class plan approved by the Fund's board of trustees.

Voting Rights. Shareholders are entitled to vote on a matter if (1) the matter concerns an amendment to the Declaration of Trust that would adversely affect to a material degree the rights and preferences of the shares of a Fund or any class; (2) the trustees determine that it is necessary or desirable to obtain a shareholder vote; (3) a merger or consolidation, share conversion, share exchange, or sale of assets is proposed and a shareholder vote is required by the 1940 Act to approve the transaction; or (4) a shareholder vote is required under the 1940 Act. The 1940 Act requires a shareholder vote under various circumstances, including to elect or remove trustees upon the written request of shareholders representing 10% or more of a Fund's net assets, to change any fundamental policy of a Fund (please see **Fundamental Policies**), and to enter into certain merger transactions. Unless otherwise required by applicable law, shareholders of a Fund receive one vote for each dollar of net asset value owned on the record date and a fractional vote for each fractional dollar of net asset value owned on the record date. However, only the shares of the Fund or the

class affected by a particular matter are entitled to vote on that matter. In addition, each class has exclusive voting rights on any matter submitted to shareholders that relates solely to that class, and each class has separate voting rights on any matter submitted to shareholders in which the interests of one class differ from the interests of another. Voting rights are noncumulative and cannot be modified without a majority vote by the shareholders.

Liquidation Rights. In the event that a Fund is liquidated, shareholders will be entitled to receive a pro rata share of the Fund's net assets. In the event that a class of shares is liquidated, shareholders of that class will be entitled to receive a pro rata share of the Fund's net assets that are allocated to that class. Shareholders may receive cash, securities, or a combination of the two.

Preemptive Rights. There are no preemptive rights associated with the Funds' shares.

Conversion Rights. Fund shareholders may convert their shares to another class of shares of the same Fund upon the satisfaction of any then-applicable eligibility requirements, as described in the Fund's current prospectus. ETF Shares cannot be converted into conventional shares of a fund by a shareholder. For additional information about the conversion rights applicable to ETF Shares, please see Information About the ETF Share Class.

Redemption Provisions. Each Fund's redemption provisions are described in its current prospectus and elsewhere in this Statement of Additional Information.

Sinking Fund Provisions. The Funds have no sinking fund provisions.

Calls or Assessment. Each Fund's shares, when issued, are fully paid and non-assessable.

Shareholder Rights. Any limitations on a shareholder's right to bring an action do not apply to claims arising under the federal securities laws to the extent that any such federal securities laws, rules, or regulations do not permit such limitations.

Tax Status of the Funds

Each Fund expects to qualify each year for treatment as a "regulated investment company" under Subchapter M of the Internal Revenue Code of 1986, as amended (the IRC). This special tax status means that the Fund will not be liable for federal tax on income and capital gains distributed to shareholders. In order to preserve its tax status, each Fund must comply with certain requirements relating to the source of its income and the diversification of its assets. If a Fund fails to meet these requirements in any taxable year, the Fund will, in some cases, be able to cure such failure, including by paying a fund-level tax, paying interest, making additional distributions, and/or disposing of certain assets. If the Fund is ineligible to or otherwise does not cure such failure for any year, it will be subject to tax on its taxable income at corporate rates, and all distributions from earnings and profits, including any distributions of net tax-exempt income and net long-term capital gains, will be taxable to shareholders as ordinary income. In addition, a Fund could be required to recognize unrealized gains, pay substantial taxes and interest, and make substantial distributions before regaining its tax status as a regulated investment company.

Dividends received and distributed by each Fund on shares of stock of domestic corporations (excluding Real Estate Investment Trusts (REITs)) and certain foreign corporations generally may be eligible to be reported by the Fund, and treated by individual shareholders, as "qualified dividend income" taxed at long-term capital gain rates instead of at higher ordinary income tax rates. Individuals must satisfy holding period and other requirements in order to be eligible for such treatment. Also, distributions attributable to income earned on a Fund's securities lending transactions, including substitute dividend payments received by a Fund with respect to a security out on loan, will not be eligible for treatment as qualified dividend income.

Taxable ordinary dividends received and distributed by each Fund on its REIT holdings may be eligible to be reported by a Fund, and treated by individual shareholders, as "qualified REIT dividends" that are eligible for a 20% deduction on its federal income tax returns. Individuals must satisfy holding period and other requirements in order to be eligible for this deduction. Without further legislation, the deduction would sunset after 2025. Shareholders should consult their own tax professionals concerning their eligibility for this deduction.

Dividends received and distributed by each Fund on shares of stock of domestic corporations (excluding REITs) may be eligible for the dividends-received deduction applicable to corporate shareholders. Corporations must satisfy certain requirements in order to claim the deduction. Also, distributions attributable to income earned on a Fund's securities lending transactions, including substitute dividend payments received by a Fund with respect to a security out on a loan, will not be eligible for the dividends-received deduction.

Each Fund may declare a capital gain dividend consisting of the excess (if any) of net realized long-term capital gains over net realized short-term capital losses. Net capital gains for a fiscal year are computed by taking into account any capital loss carryforwards of the Fund. Capital losses may be carried forward indefinitely and retain their character as either short-term or long-term.

FUNDAMENTAL POLICIES

Each Fund is subject to the following fundamental investment policies, which cannot be changed in any material way without the approval of the holders of a majority of the Fund's shares. For these purposes, a "majority" of shares means shares representing the lesser of (1) 67% or more of the Fund's net assets voted, so long as shares representing more than 50% of the Fund's net assets are present or represented by proxy or (2) more than 50% of the Fund's net assets.

Borrowing. Each Fund may borrow money only as permitted by the 1940 Act or other governing statute, by the Rules thereunder, or by the SEC or other regulatory agency with authority over the Fund.

Commodities. Each Fund may invest in commodities only as permitted by the 1940 Act or other governing statute, by the Rules thereunder, or by the SEC or other regulatory agency with authority over the Fund.

Diversification. For Vanguard European Stock Index, Pacific Stock Index, and Emerging Markets Stock Index Funds, with respect to 75% of its total assets, each Fund may not: (1) purchase more than 10% of the outstanding voting securities of any one issuer; or (2) purchase securities of any issuer if, as a result, more than 5% of the Fund's total assets would be invested in that issuer's securities. This limitation does not apply to obligations of the U.S. government or its agencies or instrumentalities. Additionally, each Fund will limit the aggregate value of holdings of a single issuer (other than U.S. government securities, as defined in the IRC) to a maximum of 25% of the Fund's total assets as of the end of each quarter of the taxable year.

For Vanguard FTSE All-World ex-US Index, Total World Stock Index, FTSE All-World ex-US Small-Cap Index, and Global ex- U.S. Real Estate Index Funds: Each Fund may not change its classification as a "management company" or its subclassifications as an "open-end company" and as a "diversified company," as each such term is defined in the 1940 Act.

Industry Concentration. Each Fund (other than Vanguard Global ex-U.S. Real Estate Index Fund) will not concentrate its investments in the securities of issuers whose principal business activities are in the same industry or group of industries, except as may be necessary to approximate the composition of its target index. Vanguard Global ex-U.S. Real Estate Index Fund will concentrate its investments in the securities of issuers whose principal business activities are in the real estate industry.

Loans. Each Fund may make loans to another person only as permitted by the 1940 Act or other governing statute, by the Rules thereunder, or by the SEC or other regulatory agency with authority over the Fund.

Real Estate. Each Fund may not invest directly in real estate unless it is acquired as a result of ownership of securities or other instruments. This restriction shall not prevent the Fund from investing in securities or other instruments (1) issued by companies that invest, deal, or otherwise engage in transactions in real estate or (2) backed or secured by real estate or interests in real estate.

Senior Securities. Each Fund may not issue senior securities except as permitted by the 1940 Act or other governing statute, by the Rules thereunder, or by the SEC or other regulatory agency with authority over the Fund.

Underwriting. Each Fund may not act as an underwriter of another issuer's securities, except to the extent that the Fund may be deemed to be an underwriter within the meaning of the Securities Act of 1933 (the 1933 Act), in connection with the purchase and sale of portfolio securities.

Compliance with the fundamental policies previously described is generally measured at the time the securities are purchased. Unless otherwise required by the 1940 Act (as is the case with borrowing), if a percentage restriction is adhered to at the time the investment is made, a later change in percentage resulting from a change in the market value of assets will not constitute a violation of such restriction. All fundamental policies must comply with applicable regulatory requirements. For more details, see **Investment Strategies, Risks, and Nonfundamental Policies**.

None of these policies prevents the Funds from having an ownership interest in Vanguard. As a part owner of Vanguard, each Fund may own securities issued by Vanguard, make loans to Vanguard, and contribute to Vanguard's costs or other financial requirements. See **Management of the Funds** for more information.

INVESTMENT STRATEGIES, RISKS, AND NONFUNDAMENTAL POLICIES

Some of the investment strategies and policies described on the following pages and in each Fund's prospectus set forth percentage limitations on a Fund's investment in, or holdings of, certain securities or other assets. Unless otherwise required by law, compliance with these strategies and policies will be determined immediately after the acquisition of such securities or assets by the Fund. Subsequent changes in values, net assets, or other circumstances will not be considered when determining whether the investment complies with the Fund's investment strategies and policies.

The following investment strategies, risks, and policies supplement each Fund's investment strategies, risks, and policies set forth in the prospectus. With respect to the different investments discussed as follows, a Fund may acquire such investments to the extent consistent with its investment strategies and policies.

Borrowing. A fund's ability to borrow money is limited by its investment policies and limitations; by the 1940 Act; and by applicable exemptions, no-action letters, interpretations, and other pronouncements issued from time to time by the SEC and its staff or any other regulatory authority with jurisdiction. Under the 1940 Act, a fund is required to maintain continuous asset coverage (i.e., total assets including borrowings, less liabilities exclusive of borrowings) of 300% of the amount borrowed, with an exception for borrowings not in excess of 5% of the fund's total assets (at the time of borrowing) made for temporary or emergency purposes. Any borrowings for temporary purposes in excess of 5% of the fund's total assets must maintain continuous asset coverage. If the 300% asset coverage should decline as a result of market fluctuations or for other reasons, a fund may be required to sell some of its portfolio holdings within three days (excluding Sundays and holidays) to reduce the debt and restore the 300% asset coverage, even though it may be disadvantageous from an investment standpoint to sell securities at that time.

Borrowing will tend to exaggerate the effect on net asset value of any increase or decrease in the market value of a fund's portfolio. Money borrowed will be subject to interest costs that may or may not be recovered by earnings on the securities purchased with the proceeds of such borrowing. A fund also may be required to maintain minimum average balances in connection with a borrowing or to pay a commitment or other fee to maintain a line of credit; either of these requirements would increase the cost of borrowing over the stated interest rate.

A borrowing transaction will not be considered to constitute the issuance, by a fund, of a "senior security," as that term is defined in Section 18(g) of the 1940 Act, and therefore such transaction will not be subject to the 300% asset coverage requirement otherwise applicable to borrowings by a fund, if the fund complies with Rule 18f-4 under the 1940 Act.

Common Stock. Common stock represents an equity or ownership interest in an issuer. Common stock typically entitles the owner to vote on the election of directors and other important matters, as well as to receive dividends on such stock. In the event an issuer is liquidated or declares bankruptcy, the claims of owners of bonds, other debt holders, and owners of preferred stock take precedence over the claims of those who own common stock.

Convertible Securities. Convertible securities are hybrid securities that combine the investment characteristics of bonds and common stocks. Convertible securities typically consist of debt securities or preferred stock that may be converted (on a voluntary or mandatory basis) within a specified period of time (normally for the entire life of the security) into a certain amount of common stock or other equity security of the same or a different issuer at a predetermined price. Convertible securities also include debt securities with warrants or common stock attached and derivatives combining the features of debt securities and equity securities. Other convertible securities with features and risks not specifically referred to herein may become available in the future. Convertible securities involve risks similar to those of both fixed income and equity securities. In a corporation's capital structure, convertible securities are senior to common stock but are usually subordinated to senior debt obligations of the issuer.

The market value of a convertible security is a function of its "investment value" and its "conversion value." A security's "investment value" represents the value of the security without its conversion feature (i.e., a nonconvertible debt security). The investment value may be determined by reference to its credit quality and the current value of its yield to maturity or probable call date. At any given time, investment value is dependent upon such factors as the general level of interest rates, the yield of similar nonconvertible securities, the financial strength of the issuer, and the seniority of the security in the issuer's capital structure. A security's "conversion value" is determined by multiplying

the number of shares the holder is entitled to receive upon conversion or exchange by the current price of the underlying security. If the conversion value of a convertible security is significantly below its investment value, the convertible security will trade like nonconvertible debt or preferred stock and its market value will not be influenced greatly by fluctuations in the market price of the underlying security. In that circumstance, the convertible security takes on the characteristics of a bond, and its price moves in the opposite direction from interest rates. Conversely, if the conversion value of a convertible security is near or above its investment value, the market value of the convertible security will be more heavily influenced by fluctuations in the market price of the underlying security. In that case, the convertible security's price may be as volatile as that of common stock. Because both interest rates and market movements can influence its value, a convertible security generally is not as sensitive to interest rates as a similar debt security, nor is it as sensitive to changes in share price as its underlying equity security. Convertible securities are often rated below investment-grade or are not rated, and they are generally subject to a high degree of credit risk.

Although all markets are prone to change over time, the generally high rate at which convertible securities are retired (through mandatory or scheduled conversions by issuers or through voluntary redemptions by holders) and replaced with newly issued convertible securities may cause the convertible securities market to change more rapidly than other markets. For example, a concentration of available convertible securities in a few economic sectors could elevate the sensitivity of the convertible securities market to the volatility of the equity markets and to the specific risks of those sectors. Moreover, convertible securities with innovative structures, such as mandatory-conversion securities and equity-linked securities, have increased the sensitivity of the convertible securities market to the volatility of the equity markets and to the special risks of those innovations, which may include risks different from, and possibly greater than, those associated with traditional convertible securities. A convertible security may be subject to redemption at the option of the issuer at a price set in the governing instrument of the convertible security. If a convertible security held by a fund is subject to such redemption option and is called for redemption, the fund must allow the issuer to redeem the security, convert it into the underlying common stock, or sell the security to a third party.

Cybersecurity Risks. The increased use of technology to conduct business could subject a fund and its third-party service providers (including, but not limited to, investment advisors, transfer agents, and custodians) to risks associated with cybersecurity. In general, a cybersecurity incident can occur as a result of a deliberate attack designed to gain unauthorized access to digital systems. If the attack is successful, an unauthorized person or persons could misappropriate assets or sensitive information, corrupt data, or cause operational disruption. A cybersecurity incident could also occur unintentionally if, for example, an authorized person inadvertently released proprietary or confidential information. Vanguard has developed robust technological safeguards and business continuity plans to prevent, or reduce the impact of, potential cybersecurity incidents. Additionally, Vanguard has a process for assessing the information security and/or cybersecurity programs implemented by a fund's third-party service providers, which helps minimize the risk of potential incidents that could impact a Vanguard fund or its shareholders. Despite these measures, a cybersecurity incident still has the potential to disrupt business operations, which could negatively impact a fund and/or its shareholders. Some examples of negative impacts that could occur as a result of a cybersecurity incident include, but are not limited to, the following: a fund may be unable to calculate its net asset value (NAV), a fund's shareholders may be unable to transact business, a fund may be unable to process transactions, or a fund may be unable to safeguard its data or the personal information of its shareholders.

Depository Receipts. Depository receipts (also sold as participatory notes) are securities that evidence ownership interests in a security or a pool of securities that have been deposited with a "depository." Depository receipts may be sponsored or unsponsored and include American Depositary Receipts (ADRs), European Depositary Receipts (EDRs), and Global Depositary Receipts (GDRs). For ADRs, the depository is typically a U.S. financial institution, and the underlying securities are issued by a foreign issuer. For other depository receipts, the depository may be a foreign or a U.S. entity, and the underlying securities may have a foreign or a U.S. issuer. Depository receipts will not necessarily be denominated in the same currency as their underlying securities. Generally, ADRs are issued in registered form, denominated in U.S. dollars, and designed for use in the U.S. securities markets. Other depository receipts, such as GDRs and EDRs, may be issued in bearer form and denominated in other currencies, and they are generally designed for use in securities markets outside the United States. Although the two types of depository receipt facilities (sponsored and unsponsored) are similar, there are differences regarding a holder's rights and obligations and the practices of market participants.

A depository may establish an unsponsored facility without participation by (or acquiescence of) the underlying issuer; typically, however, the depository requests a letter of nonobjection from the underlying issuer prior to establishing the facility. Holders of unsponsored depository receipts generally bear all the costs of the facility. The depository usually

charges fees upon the deposit and withdrawal of the underlying securities, the conversion of dividends into U.S. dollars or other currency, the disposition of noncash distributions, and the performance of other services. The depository of an unsponsored facility frequently is under no obligation to distribute shareholder communications received from the underlying issuer or to pass through voting rights to depository receipt holders with respect to the underlying securities.

Sponsored depository receipt facilities are created in generally the same manner as unsponsored facilities, except that sponsored depository receipts are established jointly by a depository and the underlying issuer through a deposit agreement. The deposit agreement sets out the rights and responsibilities of the underlying issuer, the depository, and the depository receipt holders. With sponsored facilities, the underlying issuer typically bears some of the costs of the depository receipts (such as dividend payment fees of the depository), although most sponsored depository receipt holders may bear costs such as deposit and withdrawal fees. Depositories of most sponsored depository receipts agree to distribute notices of shareholder meetings, voting instructions, and other shareholder communications and information to the depository receipt holders at the underlying issuer's request.

For purposes of a fund's investment policies, investments in depository receipts will be deemed to be investments in the underlying securities. Thus, a depository receipt representing ownership of common stock will be treated as common stock. Depository receipts do not eliminate all of the risks associated with directly investing in the securities of foreign issuers.

Derivatives. A derivative is a financial instrument that has a value based on—or “derived from”—the values of other assets, reference rates, or indexes. Derivatives may relate to a wide variety of underlying references, such as commodities, stocks, bonds, interest rates, currency exchange rates, and related indexes. Derivatives include futures contracts and options on futures contracts, certain forward-commitment transactions, options on securities, caps, floors, collars, swap agreements, and certain other financial instruments. Some derivatives, such as futures contracts and certain options, are traded on U.S. commodity and securities exchanges, while other derivatives, such as swap agreements, may be privately negotiated and entered into in the over-the-counter market (OTC Derivatives) or may be cleared through a clearinghouse (Cleared Derivatives) and traded on an exchange or swap execution facility. As a result of the Dodd-Frank Wall Street Reform and Consumer Protection Act (the Dodd-Frank Act), certain swap agreements, such as certain standardized credit default and interest rate swap agreements, must be cleared through a clearinghouse and traded on an exchange or swap execution facility. This could result in an increase in the overall costs of such transactions. While the intent of derivatives regulatory reform is to mitigate risks associated with derivatives markets, the regulations could, among other things, increase liquidity and decrease pricing for more standardized products while decreasing liquidity and increasing pricing for less standardized products. The risks associated with the use of derivatives are different from, and possibly greater than, the risks associated with investing directly in the securities or assets on which the derivatives are based.

Derivatives may be used for a variety of purposes, including—but not limited to—hedging, managing risk, seeking to stay fully invested, seeking to reduce transaction costs, seeking to simulate an investment in equity or debt securities or other investments, and seeking to add value by using derivatives to more efficiently implement portfolio positions when derivatives are favorably priced relative to equity or debt securities or other investments. Some investors may use derivatives primarily for speculative purposes while other uses of derivatives may not constitute speculation. There is no assurance that any derivatives strategy used by a fund's advisor will succeed. The other parties to a fund's OTC Derivatives contracts (usually referred to as “counterparties”) will not be considered the issuers thereof for purposes of certain provisions of the 1940 Act and the IRC, although such OTC Derivatives may qualify as securities or investments under such laws. A fund's advisor(s), however, will monitor and adjust, as appropriate, the fund's credit risk exposure to OTC Derivative counterparties.

Derivative products are highly specialized instruments that require investment techniques and risk analyses different from those associated with stocks, bonds, and other traditional investments. The use of a derivative requires an understanding not only of the underlying instrument but also of the derivative itself, without the benefit of observing the performance of the derivative under all possible market conditions.

When a fund enters into a Cleared Derivative, an initial margin deposit with a Futures Commission Merchant (FCM) is required. Initial margin deposits are typically calculated as an amount equal to the volatility in market value of a Cleared Derivative over a fixed period. If the value of the fund's Cleared Derivatives declines, the fund will be required to make additional “variation margin” payments to the FCM to settle the change in value. If the value of the fund's Cleared Derivatives increases, the FCM will be required to make additional “variation margin” payments to the fund to settle the change in value. This process is known as “marking-to-market” and is calculated on a daily basis.

For OTC Derivatives, a fund is subject to the risk that a loss may be sustained as a result of the insolvency or bankruptcy of the counterparty or the failure of the counterparty to make required payments or otherwise comply with the terms of the contract. Additionally, the use of credit derivatives can result in losses if a fund's advisor does not correctly evaluate the creditworthiness of the issuer on which the credit derivative is based.

Derivatives may be subject to liquidity risk, which exists when a particular derivative is difficult to purchase or sell. If a derivative transaction is particularly large or if the relevant market is illiquid (as is the case with certain OTC Derivatives), it may not be possible to initiate a transaction or liquidate a position at an advantageous time or price.

Derivatives may be subject to pricing or "basis" risk, which exists when a particular derivative becomes extraordinarily expensive relative to historical prices or the prices of corresponding cash market instruments. Under certain market conditions, it may not be economically feasible to initiate a transaction or liquidate a position in time to avoid a loss or take advantage of an opportunity.

Because certain derivatives have a leverage component, adverse changes in the value or level of the underlying asset, reference rate, or index can result in a loss substantially greater than the amount invested in the derivative itself. Certain derivatives have the potential for unlimited loss, regardless of the size of the initial investment. A derivative transaction will not be considered to constitute the issuance, by a fund, of a "senior security," as that term is defined in Section 18(g) of the 1940 Act, and therefore such transaction will not be subject to the 300% asset coverage requirement otherwise applicable to borrowings by a fund, if the fund complies with Rule 18f-4.

Like most other investments, derivative instruments are subject to the risk that the market value of the instrument will change in a way detrimental to a fund's interest. A fund bears the risk that its advisor will incorrectly forecast future market trends or the values of assets, reference rates, indexes, or other financial or economic factors in establishing derivative positions for the fund. If the advisor attempts to use a derivative as a hedge against, or as a substitute for, a portfolio investment, the fund will be exposed to the risk that the derivative will have or will develop imperfect or no correlation with the portfolio investment. This could cause substantial losses for the fund. Although hedging strategies involving derivative instruments can reduce the risk of loss, they can also reduce the opportunity for gain or even result in losses by offsetting favorable price movements in other fund investments. Many derivatives (in particular, OTC Derivatives) are complex and often valued subjectively. Improper valuations can result in increased cash payment requirements to counterparties or a loss of value to a fund.

On October 28, 2020, the Securities and Exchange Commission adopted new regulations governing the use of derivatives by registered investment companies ("Rule 18f-4"). The Funds were required to implement and comply with Rule 18f-4 by August 19, 2022. Rule 18f-4 imposes limits on the amount of derivatives a fund can enter into, eliminates the asset segregation framework currently used by funds to comply with Section 18 of the 1940 Act, as amended, treats derivatives as senior securities, and requires funds whose use of derivatives is more than a limited specified exposure amount to establish and maintain a comprehensive derivatives risk management program and appoint a derivatives risk manager.

Each Fund intends to comply with Rule 4.5 under the Commodity Exchange Act (CEA), under which a fund may be excluded from the definition of the term Commodity Pool Operator (CPO) if the fund meets certain conditions such as limiting its investments in certain CEA-regulated instruments (e.g., futures, options, or swaps) and complying with certain marketing restrictions. Accordingly, Vanguard is not subject to registration or regulation as a CPO with respect to each Fund under the CEA. Each Fund will only enter into futures contracts and futures options that are traded on a U.S. or foreign exchange, board of trade, or similar entity or that are quoted on an automated quotation system.

Environmental, Social, and Governance (ESG) Considerations. Vanguard's Investment Stewardship Team, on behalf of the Board of Trustees of each Vanguard-advised fund, administers proxy voting for the equity holdings of the Vanguard-advised funds. The Investment Stewardship Team may engage with issuers to better understand how they are addressing material risks, including ESG risks. Specifically, the Investment Stewardship Team may engage with companies on how they disclose significant risks to shareholders, develop their risk mitigation approach, and report on progress.

Each fund has adopted procedures and guidelines for monitoring portfolio holding human rights practices and violations pursuant to which it may assess regulatory, reputational, or other risks that may affect long-term shareholder value associated with the alleged activity. In extraordinary circumstances a fund may divest of a portfolio holding where doing so is deemed appropriate.

Exchange-Traded Funds. A fund may purchase shares of exchange-traded funds (ETFs). Typically, a fund would purchase ETF shares for the same reason it would purchase (and as an alternative to purchasing) futures contracts: to

obtain exposure to all or a portion of the stock or bond market. ETF shares enjoy several advantages over futures. Depending on the market, the holding period, and other factors, ETF shares can be less costly and more tax-efficient than futures. In addition, ETF shares can be purchased for smaller sums, offer exposure to market sectors and styles for which there is no suitable or liquid futures contract, and do not involve leverage.

An investment in an ETF generally presents the same principal risks as an investment in a conventional fund (i.e., one that is not exchange-traded) that has the same investment objective, strategies, and policies. The price of an ETF can fluctuate within a wide range, and a fund could lose money investing in an ETF if the prices of the securities owned by the ETF go down. In addition, ETFs are subject to the following risks that do not apply to conventional funds: (1) the market price of an ETF's shares may trade at a discount or a premium to their net asset value; (2) an active trading market for an ETF's shares may not develop or be maintained; and (3) trading of an ETF's shares may be halted by the activation of individual or marketwide trading halts (which halt trading for a specific period of time when the price of a particular security or overall market prices decline by a specified percentage). Trading of an ETF's shares may also be halted if the shares are delisted from the exchange without first being listed on another exchange or if the listing exchange's officials determine that such action is appropriate in the interest of a fair and orderly market or for the protection of investors.

Most ETFs are investment companies. Therefore, a fund's purchases of ETF shares generally are subject to the limitations on, and the risks of, a fund's investments in other investment companies, which are described under the heading "*Other Investment Companies.*"

Foreign Securities. Typically, foreign securities are considered to be equity or debt securities issued by entities organized, domiciled, or with a principal executive office outside the United States, such as foreign corporations and governments. Securities issued by certain companies organized outside the United States may not be deemed to be foreign securities if the company's principal operations are conducted from the United States or when the company's equity securities trade principally on a U.S. stock exchange. Foreign securities may trade in U.S. or foreign securities markets. A fund may make foreign investments either directly by purchasing foreign securities or indirectly by purchasing depositary receipts or depositary shares of similar instruments (depositary receipts) for foreign securities. Direct investments in foreign securities may be made either on foreign securities exchanges or in the over-the-counter (OTC) markets. Investing in foreign securities involves certain special risk considerations that are not typically associated with investing in securities of U.S. companies or governments.

Because foreign issuers are not generally subject to uniform accounting, auditing, and financial reporting standards and practices comparable to those applicable to U.S. issuers, there may be less publicly available information about certain foreign issuers than about U.S. issuers. Evidence of securities ownership may be uncertain in many foreign countries. As a result, there are risks that could result in a loss to the fund, including, but not limited to, the risk that a fund's trade details could be incorrectly or fraudulently entered at the time of a transaction. Securities of foreign issuers are generally more volatile and less liquid than securities of comparable U.S. issuers, and foreign investments may be effected through structures that may be complex or confusing. In certain countries, there is less government supervision and regulation of stock exchanges, brokers, and listed companies than in the United States. The risk that securities traded on foreign exchanges may be suspended, either by the issuers themselves, by an exchange, or by government authorities, is also heightened. In addition, with respect to certain foreign countries, there is the possibility of expropriation or confiscatory taxation, political or social instability, war, terrorism, nationalization, limitations on the removal of funds or other assets, or diplomatic developments that could affect U.S. investments in those countries. Additionally, the imposition of economic or other sanctions on the United States by a foreign country, or on a foreign country or issuer by the United States, could impair a fund's ability to buy, sell, hold, receive, deliver, or otherwise transact in certain investment securities or obtain exposure to foreign securities and assets. This may negatively impact the value and/or liquidity of a fund's investments and could impair a fund's ability to meet its investment objective or invest in accordance with its investment strategy. Sanctions could also result in the devaluation of a country's currency, a downgrade in the credit ratings of a country or issuers in a country, or a decline in the value and/or liquidity of securities of issuers in that country.

Although an advisor will endeavor to achieve the most favorable execution costs for a fund's portfolio transactions in foreign securities under the circumstances, commissions and other transaction costs are generally higher than those on U.S. securities. In addition, it is expected that the custodian arrangement expenses for a fund that invests primarily in foreign securities will be somewhat greater than the expenses for a fund that invests primarily in domestic securities.

Additionally, bankruptcy laws vary by jurisdiction and cash deposits may be subject to a custodian's creditors. Certain foreign governments levy withholding or other taxes against dividend and interest income from, capital gains on the sale of, or transactions in foreign securities. Although in some countries a portion of these taxes is recoverable by the fund, the nonrecovered portion of foreign withholding taxes will reduce the income received from such securities.

The value of the foreign securities held by a fund that are not U.S. dollar-denominated may be significantly affected by changes in currency exchange rates. The U.S. dollar value of a foreign security generally decreases when the value of the U.S. dollar rises against the foreign currency in which the security is denominated, and it tends to increase when the value of the U.S. dollar falls against such currency (as discussed under the heading "*Foreign Securities—Foreign Currency Transactions*," a fund may attempt to hedge its currency risks). In addition, the value of fund assets may be affected by losses and other expenses incurred from converting between various currencies in order to purchase and sell foreign securities, as well as by currency restrictions, exchange control regulations, currency devaluations, and political and economic developments.

Foreign Securities—China A-shares Risk. China A-shares (A-shares) are shares of mainland Chinese companies that are traded locally on the Shanghai and Shenzhen stock exchanges. A-shares investment by foreign investors are currently only available through the Qualified Foreign Investor (QFI) license or the China Stock Connect program. The developing state of the investment and banking systems of China subjects the settlement, clearing, and registration of securities transactions to heightened risks. Additionally, there are foreign ownership limitations that may result in limitations on investment or the return of profits if a fund purchases and sells shares of an issuer in which it owns 5% or more of the shares issued within a six-month period. It is unclear if the 5% ownership will be determined by aggregating the holdings of a fund with affiliated funds.

Due to these restrictions, it is possible that the A-shares quota available to a fund as a foreign investor may not be sufficient to meet the fund's investment needs. In this situation, a fund may seek an alternative method of economic exposure, such as by purchasing other classes of securities or depositary receipts or by utilizing derivatives. Any of these options could increase a fund's investment cost. Additionally, investing in A-shares generally increases emerging markets risk due in part to government and issuer market controls and the developing settlement and legal systems.

Investing in China A-shares through Stock Connect. The China Stock Connect program (Stock Connect) is a mutual market access program designed to, among other things, enable foreign investment in the PRC via brokers in Hong Kong. A QFI license is not required to trade via Stock Connect. There are significant risks inherent in investing in A-shares through Stock Connect. Specifically, trading can be affected by a number of issues. Stock Connect can only operate when both PRC and Hong Kong markets are open for trading and when banking services are available in both markets on the corresponding settlement days. As such, if one or both markets are closed on a U.S. trading day, a fund may not be able to dispose of its shares in a timely manner, which could adversely affect the fund's performance. Trading through Stock Connect may require pre-delivery or pre-validation of cash or securities to or by a broker. If the cash or securities are not in the broker's possession before the market opens on the day of selling, the sell order will be rejected. This requirement may limit a fund's ability to dispose of its A-shares purchased through Stock Connect in a timely manner.

Additionally, Stock Connect is subject to daily quota limitations on purchases into the PRC. Foreign investors, in the aggregate, are subject to ownership limitations for Shanghai or Shenzhen listed companies, including those purchased through Stock Connect. Once the daily quota is reached, orders to purchase additional A-shares through Stock Connect will be rejected. Only certain A-shares are eligible to be accessed through Stock Connect and such securities could lose their eligibility at any time. In addition, a fund's purchase of A-shares through Stock Connect may only be subsequently sold through Stock Connect and is not otherwise transferable. Stock Connect utilizes an omnibus clearing structure, and the fund's shares will be registered in its custodian's name on the Hong Kong Central Clearing and Settlement System. This may limit an advisor's ability to effectively manage a fund's holdings, including the potential enforcement of equity owner rights.

Foreign Securities—China Bonds Risk. The People's Republic of China (China) continues to limit direct foreign investments, generally in industries deemed important to national interests. Foreign investment in Chinese securities is also subject to substantial restrictions, although Chinese regulators have begun to introduce programs through which foreign investors can gain direct access to certain Chinese securities markets. The People's Bank of China (PBoC) has established a program that permits eligible foreign investors to invest directly in securities traded on the Chinese Interbank Bond Market (CIBM). A fund may invest in the bonds available on the CIBM through Bond Connect and the Hong Kong Monetary Authority that allows investors from mainland China and overseas to trade in each other's

respective markets. Bond Connect provides a connection between mainland China- and Hong Kong-based financial institutions, permitting investors to trade between the mainland China and Hong Kong markets electronically, thus eliminating the stricter restrictions that were present under previous access models. While the CIBM is relatively large and trading volumes are generally high, the market remains subject to similar risks as bond markets in other emerging market countries.

Investing in securities traded on the CIBM through Bond Connect is also subject to regulatory risks. The relevant rules and regulations of, the structure and terms of, and a fund's access to Bond Connect may be subject to change with minimal notice and have the potential to be applied retroactively. Additionally, as is the case with other emerging market economies, China's ability to develop and sustain its legal, tax, regulatory, financial reporting, accounting, and recordkeeping systems could influence the course of foreign investment. In particular, the Chinese legal system constitutes a significant risk factor for investors. The interpretation and enforcement of Chinese laws and regulations are uncertain, and investments in China may not be subject to the same degree of legal protection as in other developed countries.

In the event account opening or trading is suspended on the CIBM, a fund's ability to invest in securities traded on the CIBM will be adversely affected and may negatively affect the fund. Furthermore, if Bond Connect is not operating, a fund may not be able to acquire or dispose of bonds through Bond Connect in a timely manner, which could adversely affect the fund's performance.

Market volatility and potential lack of liquidity due to low trading volume of certain bonds on the CIBM may result in significant fluctuations in the prices of certain bonds traded on the CIBM. The bid-ask spreads of the prices of such securities may be large, and a fund may therefore incur significant costs and may suffer losses when selling such investments. The bonds traded on the CIBM may be difficult or impossible to sell, which may impact a fund's ability to acquire or dispose of such securities at their expected prices. A fund is also exposed to risks associated with settlement procedures and default of counterparties.

Bond Connect trades are settled in RMB, which is currently restricted and not freely convertible. As a result, a fund's investments through Bond Connect will be exposed to currency risk and incur currency conversion costs, and it cannot be guaranteed that investors will have timely access to a reliable supply of RMB. RMB is the only currency of China. Although both onshore RMB (CNY) and offshore RMB (CNH) are the same currency, they are traded in different and separate markets. These markets operate separately and can be subject to different liquidity constraints and market forces, meaning their valuations can vary. As part of standard fund management practices, a fund may hedge the foreign exchange (FX) exposure that arises from the inclusion of Chinese RMB-denominated bonds into the base currency of the fund.

Trading through Bond Connect is performed through newly developed trading platforms and operational systems. There is no assurance that such systems will function properly (in particular, under extreme market conditions) or will continue to be adapted to changes and developments in the market. In the event relevant systems fail to function properly, trading through Bond Connect may be disrupted. A fund's ability to trade through Bond Connect may therefore be adversely affected. In addition, where a fund invests in securities traded on the CIBM through Bond Connect, it may be subject to risks of delays inherent in order placing and/or settlement.

Any changes in the application of tax law to China-sourced dividends and interest from non-government bonds paid to a fund, future clarifications thereof, and/or subsequent retroactive enforcement by Chinese tax authorities may result in a loss to a fund.

Foreign Securities—Emerging Market Risk. Investing in emerging market countries involves certain risks not typically associated with investing in the United States, and it imposes risks greater than, or in addition to, risks of investing in more developed foreign countries. These risks may significantly affect the value of emerging market investments and include: (i) nationalization or expropriation of assets or confiscatory taxation; (ii) currency devaluations and other currency exchange rate fluctuations; (iii) greater social, economic, and political uncertainty and instability (including amplified risk of war and terrorism); (iv) more substantial government involvement in and control over the economy; (v) less government supervision and regulation of the securities markets and participants in those markets and possible arbitrary and unpredictable enforcement of securities regulations and other laws, which may increase the risk of market manipulation; (vi) controls on foreign investment and limitations on repatriation of invested capital and on a fund's ability to exchange local currencies for U.S. dollars; (vii) unavailability of currency-hedging techniques in certain emerging market countries; (viii) generally smaller, less seasoned, or newly organized companies; (ix) differences in, or lack of, corporate governance, accounting, auditing, record keeping and financial reporting standards, which may result in unavailability of material information about issuers and impede evaluation of such issuers; (x) difficulty in obtaining

and/or enforcing a judgment in a court outside the United States; and (xi) greater price volatility, substantially less liquidity, and significantly smaller market capitalization of securities markets. Also, any change in the leadership or politics of emerging market countries, or the countries that exercise a significant influence over those countries, may halt the expansion of or reverse the liberalization of foreign investment policies now occurring and adversely affect existing investment opportunities. Furthermore, high rates of inflation and rapid fluctuations in inflation rates have had, and may continue to have, negative effects on the economies and securities markets of certain emerging market countries. Custodial expenses and other investment-related costs are often more expensive in emerging market countries, which can reduce a fund's income from investments in securities or debt instruments of emerging market country issuers. Additionally, information regarding companies located in emerging markets may be less available and less reliable, which can impede the ability to evaluate such companies. There may also be limited regulatory oversight of certain foreign sub-custodians that hold foreign securities subject to the supervision of a fund's primary U.S.-based custodian. A fund may be limited in its ability to recover assets if a foreign sub-custodian becomes bankrupt or otherwise unable or unwilling to return assets to a fund, which may expose the fund to risk, especially in circumstances where the fund's primary custodian may not be contractually obligated to make the fund whole for the particular loss. Emerging market investments also carry the risk that strained international relations may give rise to retaliatory actions, including actions through financial markets such as purchase and ownership restrictions, sanctions, tariffs, cyberattacks, and unpredictable enforcement of securities regulations and other laws. Such actual and/or threatened retaliatory actions may impact emerging market economies and issuers in which a fund invests. For example, in China, ownership of companies in certain sectors by foreign individuals and entities is prohibited. In order to facilitate investment in these companies by foreign individuals, many Chinese companies have created variable interest entities ("VIEs") that provide exposure to the Chinese company through contractual arrangements instead of equity ownership. VIE structures are subject to risks associated with breach of the contractual arrangements, including difficulty in enforcing any judgments outside of the United States, and do not offer the same level of investor protection as direct ownership. Additionally, while VIEs are a longstanding industry practice, they have not been approved by Chinese regulators. Chinese regulators could prohibit Chinese companies from accessing foreign investment through VIEs or sever their ability to transmit economic and governance rights to foreign individuals and entities. Such actions would significantly reduce, and possibly permanently eliminate, the market value of VIEs held by a fund.

Foreign Securities—Foreign Currency Transactions. The value in U.S. dollars of a fund's non-dollar-denominated foreign securities may be affected favorably or unfavorably by changes in foreign currency exchange rates and exchange control regulations, and the fund may incur costs in connection with conversions between various currencies. In an index fund, the intent is to maintain exposure to foreign currencies to the same extent that the fund's assets are held in securities denominated in those currencies. A fund may enter into foreign currency contracts when it trades foreign stocks in order to avoid any gain or loss on the currency during the settlement period. A fund also may enter into foreign currency transactions to provide the appropriate currency exposure to offset an amount related to an open futures contract. A fund will not speculate in foreign currency exchange.

Currency exchange transactions may be conducted either on a spot (i.e., cash) basis at the rate prevailing in the currency exchange market or through forward contracts to purchase or sell foreign currencies. A forward currency contract involves an obligation to purchase or sell a specific currency at a future date, which may be any fixed number of days from the date of the contract agreed upon by the parties, at a price set at the time of the contract. These contracts are entered into with large commercial banks or other currency traders who are participants in the interbank market. Currency exchange transactions also may be effected through the use of swap agreements or other derivatives.

Currency exchange transactions may be considered borrowings. A currency exchange transaction will not be considered to constitute the issuance, by a fund, of a "senior security," as that term is defined in Section 18(g) of the 1940 Act, and therefore such transaction will not be subject to the 300% asset coverage requirement otherwise applicable to borrowings by a fund, if the fund complies with Rule 18f-4.

By entering into a forward contract for the purchase or sale of foreign currency involved in underlying security transactions, a fund may be able to protect itself against part or all of the possible loss between trade and settlement dates for that purchase or sale resulting from an adverse change in the relationship between the U.S. dollar and such foreign currency. This practice is sometimes referred to as "transaction hedging." In addition, when the advisor reasonably believes that a particular foreign currency may suffer a substantial decline against the U.S. dollar, a fund may enter into a forward contract to sell an amount of foreign currency approximating the value of some or all of its portfolio securities denominated in such foreign currency. This practice is sometimes referred to as "portfolio hedging." Similarly, when the advisor reasonably believes that the U.S. dollar may suffer a substantial decline against a foreign currency, a fund may enter into a forward contract to buy that foreign currency for a fixed dollar amount.

A fund may also attempt to hedge its foreign currency exchange rate risk by engaging in currency futures, options, and “cross-hedge” transactions. In cross-hedge transactions, a fund holding securities denominated in one foreign currency will enter into a forward currency contract to buy or sell a different foreign currency (one that the advisor reasonably believes generally tracks the currency being hedged with regard to price movements). The advisor may select the tracking (or substitute) currency rather than the currency in which the security is denominated for various reasons, including in order to take advantage of pricing or other opportunities presented by the tracking currency or to take advantage of a more liquid or more efficient market for the tracking currency. Such cross-hedges are expected to help protect a fund against an increase or decrease in the value of the U.S. dollar against certain foreign currencies.

A fund may hold a portion of its assets in bank deposits denominated in foreign currencies, so as to facilitate investment in foreign securities as well as protect against currency fluctuations and the need to convert such assets into U.S. dollars (thereby also reducing transaction costs). To the extent these assets are converted back into U.S. dollars, the value of the assets so maintained will be affected favorably or unfavorably by changes in foreign currency exchange rates and exchange control regulations.

Forecasting the movement of the currency market is extremely difficult. Whether any hedging strategy will be successful is highly uncertain. Moreover, it is impossible to forecast with precision the market value of portfolio securities at the expiration of a foreign currency forward contract. Accordingly, a fund may be required to buy or sell additional currency on the spot market (and bear the expense of such transaction) if its advisor’s predictions regarding the movement of foreign currency or securities markets prove inaccurate. In addition, the use of cross-hedging transactions may involve special risks and may leave a fund in a less advantageous position than if such a hedge had not been established. Because foreign currency forward contracts are privately negotiated transactions, there can be no assurance that a fund will have flexibility to roll over a foreign currency forward contract upon its expiration if it desires to do so. Additionally, there can be no assurance that the other party to the contract will perform its services thereunder.

Foreign Securities—Foreign Investment Companies. Some of the countries in which a fund may invest may not permit, or may place economic restrictions on, direct investment by outside investors. Fund investments in such countries may be permitted only through foreign government-approved or authorized investment vehicles, which may include other investment companies. Such investments may be made through registered or unregistered closed-end investment companies that invest in foreign securities. Investing through such vehicles may involve layered fees or expenses and may also be subject to the limitations on, and the risks of, a fund’s investments in other investment companies, which are described under the heading “*Other Investment Companies.*”

Foreign Securities—Russian Market Risk. There are significant risks inherent in investing in Russian securities. The underdeveloped state of Russia’s banking system subjects the settlement, clearing, and registration of securities transactions to significant risks. In March of 2013, the National Settlement Depository (NSD) began acting as a central depository for the majority of Russian equity securities; the NSD is now recognized as the Central Securities Depository in Russia.

For Russian issuers with fewer than 50 shareholders, ownership records are maintained only by registrars who are under contract with the issuers and are currently not settled with the NSD. Although a Russian subcustodian will maintain copies of the registrar’s records (Share Extracts) on its premises, such Share Extracts are not recorded with the NSD and may not be legally sufficient to establish ownership of securities. The registrars may not be independent from the issuer, are not necessarily subject to effective state supervision, and may not be licensed with any governmental entity. A fund will endeavor to ensure by itself or through a custodian or other agent that the fund’s interest continues to be appropriately recorded for Russian issuers with fewer than 50 shareholders by inspecting the share register and by obtaining extracts of share registers through regular confirmations. However, these extracts have no legal enforceability, and the possibility exists that a subsequent illegal amendment or other fraudulent act may deprive the fund of its ownership rights or may improperly dilute its interest. In addition, although applicable Russian regulations impose liability on registrars for losses resulting from their errors, a fund may find it difficult to enforce any rights it may have against the registrar or issuer of the securities in the event of loss of share registration.

Russia’s invasion of Ukraine has resulted in sanctions against Russian governmental institutions, Russian entities, and Russian individuals that may result in the devaluation of Russian currency; a downgrade in the country’s credit rating; a freeze of Russian foreign assets; a decline in the value and liquidity of Russian securities, properties, or interests; and other adverse consequences to the Russian economy and Russian assets. In addition, a fund’s ability to price, buy, sell,

receive, or deliver Russian investments has been and may continue to be impaired. These sanctions, and the resulting disruption of the Russian economy, may cause volatility in other regional and global markets and may negatively impact the performance of various sectors and industries, as well as companies in other countries, which could have a negative effect on the performance of a fund, even if the fund does not have direct exposure to securities of Russian issuers.

Futures Contracts and Options on Futures Contracts. Futures contracts and options on futures contracts are derivatives. A futures contract is a standardized agreement between two parties to buy or sell at a specific time in the future a specific quantity of a commodity at a specific price. The commodity may consist of an asset, a reference rate, or an index. A security futures contract relates to the sale of a specific quantity of shares of a single equity security or a narrow-based securities index. The value of a futures contract tends to increase and decrease in tandem with the value of the underlying commodity. The buyer of a futures contract enters into an agreement to purchase the underlying commodity on the settlement date and is said to be “long” the contract. The seller of a futures contract enters into an agreement to sell the underlying commodity on the settlement date and is said to be “short” the contract. The price at which a futures contract is entered into is established either in the electronic marketplace or by open outcry on the floor of an exchange between exchange members acting as traders or brokers. Open futures contracts can be liquidated or closed out by physical delivery of the underlying commodity or payment of the cash settlement amount on the settlement date, depending on the terms of the particular contract. Some financial futures contracts (such as security futures) provide for physical settlement at maturity. Other financial futures contracts (such as those relating to interest rates, foreign currencies, and broad-based securities indexes) generally provide for cash settlement at maturity. In the case of cash-settled futures contracts, the cash settlement amount is equal to the difference between the final settlement or market price for the relevant commodity on the last trading day of the contract and the price for the relevant commodity agreed upon at the outset of the contract. Most futures contracts, however, are not held until maturity but instead are “offset” before the settlement date through the establishment of an opposite and equal futures position.

The purchaser or seller of a futures contract is not required to deliver or pay for the underlying commodity unless the contract is held until the settlement date. However, both the purchaser and seller are required to deposit “initial margin” with a futures commission merchant (FCM) when the futures contract is entered into. Initial margin deposits are typically calculated as an amount equal to the volatility in market value of a contract over a fixed period. If the value of the fund’s position declines, the fund will be required to make additional “variation margin” payments to the FCM to settle the change in value. If the value of the fund’s position increases, the FCM will be required to make additional “variation margin” payments to the fund to settle the change in value. This process is known as “marking-to-market” and is calculated on a daily basis. A futures transaction will not be considered to constitute the issuance, by a fund, of a “senior security,” as that term is defined in Section 18(g) of the 1940 Act, and therefore such transaction will not be subject to the 300% asset coverage requirement otherwise applicable to borrowings by a fund, if the fund complies with Rule 18f-4.

An option on a futures contract (or futures option) conveys the right, but not the obligation, to purchase (in the case of a call option) or sell (in the case of a put option) a specific futures contract at a specific price (called the “exercise” or “strike” price) any time before the option expires. The seller of an option is called an option writer. The purchase price of an option is called the premium. The potential loss to an option buyer is limited to the amount of the premium plus transaction costs. This will be the case, for example, if the option is held and not exercised prior to its expiration date. Generally, an option writer sells options with the goal of obtaining the premium paid by the option buyer. If an option sold by an option writer expires without being exercised, the writer retains the full amount of the premium. The option writer, however, has unlimited economic risk because its potential loss, except to the extent offset by the premium received when the option was written, is equal to the amount the option is “in-the-money” at the expiration date. A call option is in-the-money if the value of the underlying futures contract exceeds the exercise price of the option. A put option is in-the-money if the exercise price of the option exceeds the value of the underlying futures contract. Generally, any profit realized by an option buyer represents a loss for the option writer.

A fund that takes the position of a writer of a futures option is required to deposit and maintain initial and variation margin with respect to the option, as previously described in the case of futures contracts. A futures option transaction will not be considered to constitute the issuance, by a fund, of a “senior security,” as that term is defined in Section 18(g) of the 1940 Act, and therefore such transaction will not be subject to the 300% asset coverage requirement otherwise applicable to borrowings by a fund, if the fund complies with Rule 18f-4.

Futures Contracts and Options on Futures Contracts—Risks. The risk of loss in trading futures contracts and in writing futures options can be substantial because of the low margin deposits required, the extremely high degree of leverage involved in futures and options pricing, and the potential high volatility of the futures markets. As a result, a

relatively small price movement in a futures position may result in immediate and substantial loss (or gain) for the investor. For example, if at the time of purchase, 10% of the value of the futures contract is deposited as margin, a subsequent 10% decrease in the value of the futures contract would result in a total loss of the margin deposit, before any deduction for the transaction costs, if the account were then closed out. A 15% decrease would result in a loss equal to 150% of the original margin deposit if the contract were closed out. Thus, a purchase or sale of a futures contract, and the writing of a futures option, may result in losses in excess of the amount invested in the position. In the event of adverse price movements, a fund would continue to be required to make daily cash payments to maintain its required margin. In such situations, if the fund has insufficient cash, it may have to sell portfolio securities to meet daily margin requirements (and segregation requirements, if applicable) at a time when it may be disadvantageous to do so. In addition, on the settlement date, a fund may be required to make delivery of the instruments underlying the futures positions it holds.

A fund could suffer losses if it is unable to close out a futures contract or a futures option because of an illiquid secondary market. Futures contracts and futures options may be closed out only on an exchange that provides a secondary market for such products. However, there can be no assurance that a liquid secondary market will exist for any particular futures product at any specific time. Thus, it may not be possible to close a futures or option position. Moreover, most futures exchanges limit the amount of fluctuation permitted in futures contract prices during a single trading day. The daily limit establishes the maximum amount that the price of a futures contract may vary either up or down from the previous day's settlement price at the end of a trading session. Once the daily limit has been reached in a particular type of contract, no trades may be made on that day at a price beyond that limit. The daily limit governs only price movement during a particular trading day, and therefore does not limit potential losses because the limit may prevent the liquidation of unfavorable positions. Futures contract prices have occasionally moved to the daily limit for several consecutive trading days with little or no trading, thereby preventing prompt liquidation of future positions and subjecting some futures traders to substantial losses. The inability to close futures and options positions also could have an adverse impact on the ability to hedge a portfolio investment or to establish a substitute for a portfolio investment. U.S. Treasury futures are generally not subject to such daily limits.

A fund bears the risk that its advisor will incorrectly predict future market trends. If the advisor attempts to use a futures contract or a futures option as a hedge against, or as a substitute for, a portfolio investment, the fund will be exposed to the risk that the futures position will have or will develop imperfect or no correlation with the portfolio investment. This could cause substantial losses for the fund. Although hedging strategies involving futures products can reduce the risk of loss, they can also reduce the opportunity for gain or even result in losses by offsetting favorable price movements in other fund investments.

A fund could lose margin payments it has deposited with its FCM if, for example, the FCM breaches its agreement with the fund or becomes insolvent or goes into bankruptcy. In that event, the fund may be entitled to return of margin owed to it only in proportion to the amount received by the FCM's other customers, potentially resulting in losses to the fund.

Interfund Borrowing and Lending. The SEC has granted an exemption permitting registered open-end Vanguard funds to participate in Vanguard's interfund lending program. This program allows the Vanguard funds to borrow money from and lend money to each other for temporary or emergency purposes. The program is subject to a number of conditions, including, among other things, the requirements that (1) no fund may borrow or lend money through the program unless it receives a more favorable interest rate than is typically available from a bank for a comparable transaction, (2) no fund may lend money if the loan would cause its aggregate outstanding loans through the program to exceed 15% of its net assets at the time of the loan, and (3) a fund's interfund loans to any one fund shall not exceed 5% of the lending fund's net assets. In addition, a Vanguard fund may participate in the program only if and to the extent that such participation is consistent with the fund's investment objective and investment policies. The boards of trustees of the Vanguard funds are responsible for overseeing the interfund lending program. Any delay in repayment to a lending fund could result in a lost investment opportunity or additional borrowing costs.

Investing for Control. Each Vanguard fund invests in securities and other instruments for the sole purpose of achieving a specific investment objective. As such, a Vanguard fund does not seek to acquire, individually or collectively with any other Vanguard fund, enough of a company's outstanding voting stock to have control over management decisions. A Vanguard fund does not invest for the purpose of controlling a company's management.

Market Disruption. Significant market disruptions, such as those caused by pandemics, natural or environmental disasters, war, acts of terrorism, or other events, can adversely affect local and global markets and normal market operations. Market disruptions may exacerbate political, social, and economic risks discussed above and in a fund's prospectus. Additionally, market disruptions may result in increased market volatility; regulatory trading halts; closure of

domestic or foreign exchanges, markets, or governments; or market participants operating pursuant to business continuity plans for indeterminate periods of time. Such events can be highly disruptive to economies and markets and significantly impact individual companies, sectors, industries, markets, currencies, interest and inflation rates, credit ratings, investor sentiment, and other factors affecting the value of a fund's investments and operation of a fund. These events could also result in the closure of businesses that are integral to a fund's operations or otherwise disrupt the ability of employees of fund service providers to perform essential tasks on behalf of a fund.

Options. An option is a derivative. An option on a security (or index) is a contract that gives the holder of the option, in return for the payment of a "premium," the right, but not the obligation, to buy from (in the case of a call option) or sell to (in the case of a put option) the writer of the option the security underlying the option (or the cash value of the index) at a specified exercise price prior to the expiration date of the option. The writer of an option on a security has the obligation upon exercise of the option to deliver the underlying security upon payment of the exercise price (in the case of a call option) or to pay the exercise price upon delivery of the underlying security (in the case of a put option). The writer of an option on an index has the obligation upon exercise of the option to pay an amount equal to the cash value of the index minus the exercise price, multiplied by the specified multiplier for the index option. The multiplier for an index option determines the size of the investment position the option represents. Unlike exchange-traded options, which are standardized with respect to the underlying instrument, expiration date, contract size, and strike price, the terms of over-the-counter (OTC) options (options not traded on exchanges) generally are established through negotiation with the other party to the option contract. Although this type of arrangement allows the purchaser or writer greater flexibility to tailor an option to its needs, OTC options generally involve credit risk to the counterparty, whereas for exchange-traded, centrally cleared options, credit risk is mutualized through the involvement of the applicable clearing house.

The buyer (or holder) of an option is said to be "long" the option, while the seller (or writer) of an option is said to be "short" the option. A call option grants to the holder the right to buy (and obligates the writer to sell) the underlying security at the strike price, which is the predetermined price at which the option may be exercised. A put option grants to the holder the right to sell (and obligates the writer to buy) the underlying security at the strike price. The purchase price of an option is called the "premium." The potential loss to an option buyer is limited to the amount of the premium plus transaction costs. This will be the case if the option is held and not exercised prior to its expiration date. Generally, an option writer sells options with the goal of obtaining the premium paid by the option buyer, but that person could also seek to profit from an anticipated rise or decline in option prices. If an option sold by an option writer expires without being exercised, the writer retains the full amount of the premium. The option writer, however, has unlimited economic risk because its potential loss, except to the extent offset by the premium received when the option was written, is equal to the amount the option is "in-the-money" at the expiration date. A call option is in-the-money if the value of the underlying position exceeds the exercise price of the option. A put option is in-the-money if the exercise price of the option exceeds the value of the underlying position. Generally, any profit realized by an option buyer represents a loss for the option writer. The writing of an option will not be considered to constitute the issuance, by a fund, of a "senior security," as that term is defined in Section 18(g) of the 1940 Act, and therefore such transaction will not be subject to the 300% asset coverage requirement otherwise applicable to borrowings by a fund, if the fund complies with Rule 18f-4.

If a trading market, in particular options, were to become unavailable, investors in those options (such as the funds) would be unable to close out their positions until trading resumes, and they may be faced with substantial losses if the value of the underlying instrument moves adversely during that time. Even if the market were to remain available, there may be times when options prices will not maintain their customary or anticipated relationships to the prices of the underlying instruments and related instruments. Lack of investor interest, changes in volatility, or other factors or conditions might adversely affect the liquidity, efficiency, continuity, or even the orderliness of the market for particular options.

A fund bears the risk that its advisor will not accurately predict future market trends. If the advisor attempts to use an option as a hedge against, or as a substitute for, a portfolio investment, the fund will be exposed to the risk that the option will have or will develop imperfect or no correlation with the portfolio investment, which could cause substantial losses for the fund. Although hedging strategies involving options can reduce the risk of loss, they can also reduce the opportunity for gain or even result in losses by offsetting favorable price movements in other fund investments. Many options, in particular OTC options, are complex and often valued based on subjective factors. Improper valuations can result in increased cash payment requirements to counterparties or a loss of value to a fund.

OTC Swap Agreements. An over-the-counter (OTC) swap agreement, which is a type of derivative, is an agreement between two parties (counterparties) to exchange payments at specified dates (periodic payment dates) on the basis of a specified amount (notional amount) with the payments calculated with reference to a specified asset, reference rate, or index.

Examples of OTC swap agreements include, but are not limited to, interest rate swaps, credit default swaps, equity swaps, commodity swaps, foreign currency swaps, index swaps, excess return swaps, and total return swaps. Most OTC swap agreements provide that when the periodic payment dates for both parties are the same, payments are netted and only the net amount is paid to the counterparty entitled to receive the net payment. Consequently, a fund's current obligations (or rights) under an OTC swap agreement will generally be equal only to the net amount to be paid or received under the agreement, based on the relative values of the positions held by each counterparty. OTC swap agreements allow for a wide variety of transactions. For example, fixed rate payments may be exchanged for floating rate payments; U.S. dollar-denominated payments may be exchanged for payments denominated in a different currency; and payments tied to the price of one asset, reference rate, or index may be exchanged for payments tied to the price of another asset, reference rate, or index.

An OTC option on an OTC swap agreement, also called a "swaption," is an option that gives the buyer the right, but not the obligation, to enter into a swap on a future date in exchange for paying a market-based "premium." A receiver swaption gives the owner the right to receive the total return of a specified asset, reference rate, or index. A payer swaption gives the owner the right to pay the total return of a specified asset, reference rate, or index. Swaptions also include options that allow an existing swap to be terminated or extended by one of the counterparties.

The use of OTC swap agreements by a fund entails certain risks, which may be different from, or possibly greater than, the risks associated with investing directly in the securities and other investments that are the referenced asset for the swap agreement. OTC swaps are highly specialized instruments that require investment techniques, risk analyses, and tax planning different from those associated with stocks, bonds, and other traditional investments. The use of an OTC swap requires an understanding not only of the referenced asset, reference rate, or index but also of the swap itself, without the benefit of observing the performance of the swap under all possible market conditions.

OTC swap agreements may be subject to liquidity risk, which exists when a particular swap is difficult to purchase or sell. If an OTC swap transaction is particularly large or if the relevant market is illiquid (as is the case with many OTC swaps), it may not be possible to initiate a transaction or liquidate a position at an advantageous time or price, which may result in significant losses. In addition, OTC swap transactions may be subject to a fund's limitation on investments in illiquid securities.

OTC swap agreements may be subject to pricing risk, which exists when a particular swap becomes extraordinarily expensive or inexpensive relative to historical prices or the prices of corresponding cash market instruments. Under certain market conditions, it may not be economically feasible to initiate a transaction or liquidate a position in time to avoid a loss or take advantage of an opportunity or to realize the intrinsic value of the OTC swap agreement.

Because certain OTC swap agreements have a leverage component, adverse changes in the value or level of the underlying asset, reference rate, or index can result in a loss substantially greater than the amount invested in the swap itself. Certain OTC swaps have the potential for unlimited loss, regardless of the size of the initial investment. A leveraged OTC swap transaction will not be considered to constitute the issuance, by a fund, of a "senior security," as that term is defined in Section 18(g) of the 1940 Act, and therefore such transaction will not be subject to the 300% asset coverage requirement otherwise applicable to borrowings by a fund, if the fund complies with Rule 18f-4.

Like most other investments, OTC swap agreements are subject to the risk that the market value of the instrument will change in a way detrimental to a fund's interest. A fund bears the risk that its advisor will not accurately forecast future market trends or the values of assets, reference rates, indexes, or other economic factors in establishing OTC swap positions for the fund. If the advisor attempts to use an OTC swap as a hedge against, or as a substitute for, a portfolio investment, the fund will be exposed to the risk that the OTC swap will have or will develop imperfect or no correlation with the portfolio investment. This could cause substantial losses for the fund. Although hedging strategies involving OTC swap instruments can reduce the risk of loss, they can also reduce the opportunity for gain or even result in losses by offsetting favorable price movements in other fund investments. Many OTC swaps are complex and often valued subjectively. Improper valuations can result in increased cash payment requirements to counterparties or a loss of value to a fund.

The use of an OTC swap agreement also involves the risk that a loss may be sustained as a result of the insolvency or bankruptcy of the counterparty or the failure of the counterparty to make required payments or otherwise comply with the terms of the agreement. Additionally, the use of credit default swaps can result in losses if a fund's advisor does not correctly evaluate the creditworthiness of the issuer on which the credit swap is based.

Other Investment Companies. A fund may invest in other investment companies, including ETFs, non-exchange traded U.S. registered open-end investment companies (mutual funds), and closed-end investment companies, to the extent permitted by applicable law or SEC exemption. Under Section 12(d)(1) of the 1940 Act, a fund may invest up to 10% of its assets in shares of investment companies generally and up to 5% of its assets in any one investment company, as long as no investment represents more than 3% of the voting stock of an acquired investment company. In addition, no funds for which Vanguard acts as an advisor may, in the aggregate, own more than 10% of the voting stock of a closed-end investment company. SEC Rule 12d1-4 under the 1940 Act permits registered investment companies to invest in other registered investment companies beyond the limits in Section 12(d)(1), subject to certain conditions, including that funds with different investment advisors must enter into a funds of funds investment agreement. Rule 12d1-4 is also designed to limit the use of complex fund structures. Under Rule 12d1-4, an acquired fund is prohibited from purchasing or otherwise acquiring the securities of another investment company or private fund if, immediately after the purchase, the securities of investment companies and private funds owned by the acquired fund have an aggregate value in excess of 10% of the value of the acquired fund's total assets, subject to certain limited exceptions. Accordingly, to the extent a fund's shares are sold to other investment companies in reliance on Rule 12d1-4, the acquired fund will be limited in the amount it could invest in other investment companies and private funds. If a fund invests in other investment companies, shareholders will bear not only their proportionate share of the fund's expenses (including operating expenses and the fees of the advisor), but they also may indirectly bear similar expenses of the underlying investment companies. Certain investment companies, such as business development companies (BDCs), are more akin to operating companies and, as such, their expenses are not direct expenses paid by fund shareholders and are not used to calculate the fund's net asset value. SEC rules nevertheless require that any expenses incurred by a BDC be included in a fund's expense ratio as "Acquired Fund Fees and Expenses." The expense ratio of a fund that holds a BDC will thus overstate what the fund actually spends on portfolio management, administrative services, and other shareholder services by an amount equal to these Acquired Fund Fees and Expenses. The Acquired Fund Fees and Expenses are not included in a fund's financial statements, which provide a clearer picture of a fund's actual operating expenses. Shareholders would also be exposed to the risks associated not only with the investments of the fund but also with the portfolio investments of the underlying investment companies. Certain types of investment companies, such as closed-end investment companies, issue a fixed number of shares that typically trade on a stock exchange or over-the-counter at a premium or discount to their net asset value. Others are continuously offered at net asset value but also may be traded on the secondary market.

A fund may be limited to purchasing a particular share class of other investment companies (underlying funds). In certain cases, an investor may be able to purchase lower-cost shares of such underlying funds separately, and therefore be able to construct, and maintain over time, a similar portfolio of investments while incurring lower overall expenses.

Ownership Limitations and Regulatory Relief. The ability of Vanguard and external advisors to purchase or dispose of certain fund investments, or to exercise rights on behalf of a Fund, is or may be restricted or impaired because of limitations imposed by law, regulation, or by certain regulators or issuers. As a result, Vanguard and external advisors, on behalf of certain Funds currently and other Funds potentially in the future, are required to limit purchases, sell existing investments, or otherwise limit the exercise of shareholder rights by the Fund, including voting rights. These ownership restrictions and limitations can impact a Fund's performance. For index funds, this impact generally takes the form of tracking error, which can arise when a fund is not able to acquire its desired amount of a security. For actively managed funds, this impact can result, for example, in missed investment opportunities otherwise desired by a fund's investment advisor. If a Fund is required to limit its investment in a particular issuer, then the Fund may seek to obtain regulatory or corporate consents or ownership waivers. Other options a Fund may pursue include seeking to obtain economic exposure to that issuer through alternative means, such as through a derivative or through investment in a wholly owned subsidiary, both of which may be more costly than owning securities of the issuer directly. In the event a derivative, such as a swap, is used as an alternative means of exposure, Vanguard and external advisors on behalf of a Fund are not able to guarantee the availability of derivatives necessary to allow economic exposure to the security, sector, or industry. This limited availability may have additional impacts to Fund performance. Additionally, use of derivatives as an alternative means of exposure subjects a Fund to derivatives-related risks. Ownership restrictions and limitations could result in unanticipated tax consequences to the Fund that may affect the amount, timing, and character of distributions to shareholders.

Preferred Stock. Preferred stock represents an equity or ownership interest in an issuer. Preferred stock normally pays dividends at a specified rate and has precedence over common stock in the event the issuer is liquidated or declares bankruptcy. However, in the event an issuer is liquidated or declares bankruptcy, the claims of owners of bonds take precedence over the claims of those who own preferred and common stock. Preferred stock, unlike common stock, often has a stated dividend rate payable from the corporation's earnings. Preferred stock dividends may be cumulative or noncumulative, participating, or auction rate. "Cumulative" dividend provisions require all or a portion of prior unpaid dividends to be paid before dividends can be paid to the issuer's common stock. "Participating" preferred stock may be entitled to a dividend exceeding the stated dividend in certain cases. If interest rates rise, the fixed dividend on preferred stocks may be less attractive, causing the price of such stocks to decline. Preferred stock may have mandatory sinking fund provisions, as well as provisions allowing the stock to be called or redeemed, which can limit the benefit of a decline in interest rates. Preferred stock is subject to many of the risks to which common stock and debt securities are subject. In addition, preferred stock may be subject to more abrupt or erratic price movements than common stock or debt securities because preferred stock may trade with less frequency and in more limited volume.

Real Estate Investment Trusts (REITs). An equity REIT owns real estate properties directly and generates income from rental and lease payments. Equity REITs also have the potential to generate capital gains as properties are sold at a profit. A mortgage REIT makes construction, development, and long-term mortgage loans to commercial real estate developers and earns interest income on these loans. A hybrid REIT holds both properties and mortgages. To avoid taxation at the corporate level, REITs must distribute most of their earnings to shareholders.

Investments in REITs are subject to many of the same risks as direct investments in real estate. In general, real estate values can be affected by a variety of factors, including, but not limited to, supply and demand for properties, general or local economic conditions, and the strength of specific industries that rent properties. Ultimately, a REIT's performance depends on the types and locations of the properties it owns and on how well the REIT manages its properties. For example, rental income could decline because of extended vacancies, increased competition from nearby properties, tenants' failure to pay rent, regulatory limitations on rents, fluctuations in rental income, variations in market rental rates, or incompetent management. Property values could decrease because of overbuilding in the area, environmental liabilities, uninsured damages caused by natural disasters, a general decline in the neighborhood, losses because of casualty or condemnation, increases in property taxes, or changes in zoning laws.

The value of a REIT may also be affected by changes in interest rates. Rising interest rates generally increase the cost of financing for real estate projects, which could cause the value of an equity REIT to decline. During periods of declining interest rates, mortgagors may elect to prepay mortgages held by mortgage REITs, which could lower or diminish the yield on the REIT. REITs are also subject to heavy cash-flow dependency, default by borrowers, and changes in tax and regulatory requirements. In addition, a REIT may fail to meet the requirements for qualification and taxation as a REIT under the IRC and/or fail to maintain exemption from the 1940 Act.

Reliance on Service Providers, Data Providers, and Other Technology. Vanguard funds rely upon the performance of service providers to execute several key functions, which may include functions integral to a fund's operations. Failure by any service provider to carry out its obligations to a fund could disrupt the business of the fund and could have an adverse effect on the fund's performance. A fund's service providers' reliance on certain technology or information vendors (e.g., trading systems, investment analysis tools, benchmark analytics, and tax and accounting tools) could also adversely affect a fund and its shareholders. For example, a fund's investment advisor may use models and/or data with respect to potential investments for the fund. When models or data prove to be incorrect or incomplete, any decisions made in reliance upon such models or data expose a fund to potential risks.

Repurchase Agreements. A repurchase agreement is an agreement under which a fund acquires a debt security (generally a security issued by the U.S. government or an agency thereof, a banker's acceptance, or a certificate of deposit) from a bank, a broker, a dealer, or another counterparty that meets minimum credit requirements and simultaneously agrees to resell such security to the seller at an agreed-upon price and date (normally, the next business day). Because the security purchased constitutes collateral for the repurchase obligation, a repurchase agreement may be considered a loan that is collateralized by the security purchased. The resale price reflects an agreed-upon interest rate effective for the period the instrument is held by a fund and is unrelated to the interest rate on the underlying instrument. In these transactions, the securities acquired by a fund (including accrued interest earned thereon) must have a total value in excess of the value of the repurchase agreement and be held by a custodian bank until repurchased. In addition, the investment advisor will monitor a fund's repurchase agreement transactions generally and will evaluate the creditworthiness of any bank, broker, dealer, or other counterparty that meets minimum credit requirements to a repurchase agreement relating to a fund. The aggregate amount of any such agreements is not limited, except to the extent required by law.

The use of repurchase agreements involves certain risks. One risk is the seller's ability to pay the agreed-upon repurchase price on the repurchase date. If the seller defaults, the fund may incur costs in disposing of the collateral, which would reduce the amount realized thereon. If the seller seeks relief under bankruptcy laws, the disposition of the collateral may be delayed or limited. For example, if the other party to the agreement becomes insolvent and subject to liquidation or reorganization under bankruptcy or other laws, a court may determine that the underlying security is collateral for a loan by the fund not within its control, and therefore the realization by the fund on such collateral may be automatically stayed. Finally, it is possible that the fund may not be able to substantiate its interest in the underlying security and may be deemed an unsecured creditor of the other party to the agreement.

Restricted and Illiquid Securities/Investments (including Private Placements). Illiquid securities/investments are investments that a fund reasonably expects cannot be sold or disposed of in current market conditions in seven calendar days or less without the sale or disposition significantly changing the market value of the investment. The SEC generally limits aggregate holdings of illiquid securities/investments by a mutual fund to 15% of its net assets (5% for money market funds). A fund may experience difficulty valuing and selling illiquid securities/investments and, in some cases, may be unable to value or sell certain illiquid securities for an indefinite period of time. Illiquid securities may include a wide variety of investments, such as (1) repurchase agreements maturing in more than seven days (unless the agreements have demand/redemption features), (2) OTC options contracts and certain other derivatives (including certain swap agreements), (3) fixed time deposits that are not subject to prepayment or do not provide for withdrawal penalties upon prepayment (other than overnight deposits), (4) certain loan interests and other direct debt instruments, (5) certain municipal lease obligations, (6) private equity investments, (7) commercial paper issued pursuant to Section 4(a)(2) of the 1933 Act, and (8) securities whose disposition is restricted under the federal securities laws. Illiquid securities/investments may include restricted, privately placed securities (such as private investments in public equity (PIPEs) or special purpose acquisition companies (SPACs)) that, under the federal securities laws, generally may be resold only to qualified institutional buyers. If a market develops for a restricted security held by a fund, it may be treated as a liquid security in accordance with guidelines approved by the board of trustees.

Reverse Repurchase Agreements. In a reverse repurchase agreement, a fund sells a security to another party, such as a bank or broker-dealer, in return for cash and agrees to repurchase that security at an agreed-upon price and time. Under a reverse repurchase agreement, the fund continues to receive any principal and interest payments on the underlying security during the term of the agreement. Reverse repurchase agreements involve the risk that the market value of securities retained by the fund may decline below the repurchase price of the securities sold by the fund that it is obligated to repurchase. In addition to the risk of such a loss, fees charged to the fund may exceed the return the fund earns from investing the proceeds received from the reverse repurchase agreement transaction. A reverse repurchase agreement may be considered a borrowing transaction for purposes of the 1940 Act. A reverse repurchase agreement transaction will not be considered to constitute the issuance, by a fund, of a "senior security," as that term is defined in Section 18(g) of the 1940 Act, and therefore such transaction will not be subject to the 300% asset coverage requirement otherwise applicable to borrowings by a fund, if the fund complies with Rule 18f-4. A fund will enter into reverse repurchase agreements only with parties whose creditworthiness has been reviewed and found satisfactory by the advisor. If the buyer in a reverse repurchase agreement becomes insolvent or files for bankruptcy, a fund's use of proceeds from the sale may be restricted while the other party or its trustee or receiver determines if it will honor the fund's right to repurchase the securities. If the fund is unable to recover the securities it sold in a reverse repurchase agreement, it would realize a loss equal to the difference between the value of the securities and the payment it received for them.

Securities Lending. A fund may lend its securities to financial institutions (typically brokers, dealers, and banks) to generate income for the fund. There are certain risks associated with lending securities, including counterparty, credit, market, regulatory, and operational risks. Vanguard considers the creditworthiness of the borrower, among other factors, in making decisions with respect to the lending of securities, subject to oversight by the board of trustees. If the borrower defaults on its obligation to return the securities lent because of insolvency or other reasons, a fund could experience delays and costs in recovering the securities lent or in gaining access to the collateral. These delays and costs could be greater for certain types of foreign securities, as well as certain types of borrowers that are subject to global regulatory regimes. If a fund is not able to recover the securities lent, the fund may sell the collateral and purchase a replacement security in the market. Collateral investments are subject to market appreciation or depreciation. The value of the collateral could decrease below the value of the replacement investment by the time the replacement investment is purchased. Currently, a fund invests cash collateral into Vanguard Market Liquidity Fund, an affiliated money market fund that invests in high-quality, short-term money market instruments.

The terms and the structure of the loan arrangements, as well as the aggregate amount of securities loans, must be consistent with the 1940 Act and the rules or interpretations of the SEC thereunder. These provisions limit the amount

of securities a fund may lend to 33⅓% of the fund's total assets and require that (1) the borrower pledge and maintain with the fund collateral consisting of cash, an irrevocable letter of credit, or securities issued or guaranteed by the U.S. government having at all times not less than 100% of the value of the securities lent; (2) the borrower add to such collateral whenever the price of the securities lent rises (i.e., the borrower "marks to market" on a daily basis); (3) the loan be made subject to termination by the fund at any time; and (4) the fund receives reasonable interest on the loan (which may include the fund investing any cash collateral in interest-bearing short-term investments), any distribution on the lent securities, and any increase in their market value. Loan arrangements made by a fund will comply with any other applicable regulatory requirements. At the present time, the SEC does not object if an investment company pays reasonable negotiated fees in connection with lent securities, so long as such fees are set forth in a written contract and approved by the investment company's trustees. In addition, voting rights pass with the lent securities, but if a fund has knowledge that a material event will occur affecting securities on loan, and in respect to which the holder of the securities will be entitled to vote or consent, the lender must be entitled to call the loaned securities in time to vote or consent. A fund bears the risk that there may be a delay in the return of the securities, which may impair the fund's ability to vote on such a matter. See *Tax Status of the Funds* for information about certain tax consequences related to a fund's securities lending activities.

Pursuant to Vanguard's securities lending policy, Vanguard's fixed income and money market funds are not permitted to, and do not, lend their investment securities.

Tax Matters—Federal Tax Discussion. Discussion herein of U.S. federal income tax matters summarizes some of the important, generally applicable U.S. federal tax considerations relevant to investment in a fund based on the IRC, U.S. Treasury regulations, and other applicable authorities. These authorities are subject to change by legislative, administrative, or judicial action, possibly with retroactive effect. Each Fund has not requested and will not request an advance ruling from the Internal Revenue Service (IRS) as to the U.S. federal income tax matters discussed in this Statement of Additional Information. In some cases, a fund's tax position may be uncertain under current tax law and an adverse determination or future guidance by the IRS with respect to such a position could adversely affect the fund and its shareholders, including the fund's ability to continue to qualify as a regulated investment company or to continue to pursue its current investment strategy. A shareholder should consult his or her tax professional for information regarding the particular situation and the possible application of U.S. federal, state, local, foreign, and other taxes.

Tax Matters—Federal Tax Treatment of Derivatives, Hedging, and Related Transactions. A fund's transactions in derivative instruments (including, but not limited to, options, futures, forward contracts, and swap agreements), as well as any of the fund's hedging, short sale, securities loan, or similar transactions, may be subject to one or more special tax rules that accelerate income to the fund, defer losses to the fund, cause adjustments in the holding periods of the fund's securities, convert long-term capital gains into short-term capital gains, or convert short-term capital losses into long-term capital losses. These rules could therefore affect the amount, timing, and character of distributions to shareholders.

Because these and other tax rules applicable to these types of transactions are in some cases uncertain under current law, an adverse determination or future guidance by the IRS with respect to these rules (which determination or guidance could be retroactive) may affect whether a fund has made sufficient distributions, and otherwise satisfied the relevant requirements, to maintain its qualification as a regulated investment company and avoid a fund-level tax.

Tax Matters—Federal Tax Treatment of Futures Contracts. For federal income tax purposes, a fund generally must recognize, as of the end of each taxable year, any net unrealized gains and losses on certain futures contracts, as well as any gains and losses actually realized during the year. In these cases, any gain or loss recognized with respect to a futures contract is considered to be 60% long-term capital gain or loss and 40% short-term capital gain or loss, without regard to the holding period of the contract. Gains and losses on certain other futures contracts (primarily non-U.S. futures contracts) are not recognized until the contracts are closed and are treated as long-term or short-term, depending on the holding period of the contract. Sales of futures contracts that are intended to hedge against a change in the value of securities held by a fund may affect the holding period of such securities and, consequently, the nature of the gain or loss on such securities upon disposition. A fund may be required to defer the recognition of losses on one position, such as futures contracts, to the extent of any unrecognized gains on a related offsetting position held by the fund.

A fund will distribute to shareholders annually any net capital gains that have been recognized for federal income tax purposes on futures transactions. Such distributions will be combined with distributions of capital gains realized on the fund's other investments, and shareholders will be advised on the nature of the distributions.

Tax Matters—Federal Tax Treatment of Non-U.S. Currency Transactions. Special rules generally govern the federal income tax treatment of a fund’s transactions in the following: non-U.S. currencies; non-U.S. currency-denominated debt obligations; and certain non-U.S. currency options, futures contracts, forward contracts, and similar instruments. Accordingly, if a fund engages in these types of transactions it may have ordinary income or loss to the extent that such income or loss results from fluctuations in the value of the non-U.S. currency concerned. Such ordinary income could accelerate fund distributions to shareholders and increase the distributions taxed to shareholders as ordinary income. Any ordinary loss so created will generally reduce ordinary income distributions and, in some cases, could require the recharacterization of prior ordinary income distributions. Net ordinary losses cannot be carried forward by the fund to offset income or gains realized in subsequent taxable years.

Any gain or loss attributable to the non-U.S. currency component of a transaction engaged in by a fund that is not subject to these special currency rules (such as foreign equity investments other than certain preferred stocks) will generally be treated as a capital gain or loss and will not be segregated from the gain or loss on the underlying transaction.

To the extent a fund engages in non-U.S. currency hedging, the fund may elect or be required to apply other rules that could affect the character, timing, or amount of the fund’s gains and losses. For more information, see “*Tax Matters—Federal Tax Treatment of Derivatives, Hedging, and Related Transactions.*”

Tax Matters—Foreign Tax Credit. Foreign governments may withhold taxes on dividends and interest paid with respect to foreign securities held by a fund. Foreign governments may also impose taxes on other payments or gains with respect to foreign securities. If, at the close of its fiscal year, more than 50% of a fund’s total assets are invested in securities of foreign issuers, the fund may elect to pass through to shareholders the ability to deduct or, if they meet certain holding period requirements, take a credit for foreign taxes paid by the fund. Similarly, if at the close of each quarter of a fund’s taxable year, at least 50% of its total assets consist of interests in other regulated investment companies, the fund is permitted to elect to pass through to its shareholders the foreign income taxes paid by the fund in connection with foreign securities held directly by the fund or held by a regulated investment company in which the fund invests that has elected to pass through such taxes to shareholders.

Tax Matters—Passive Foreign Investment Companies. To the extent that a fund invests in stock in a foreign company, such stock may constitute an equity investment in a passive foreign investment company (PFIC). A foreign company is generally a PFIC if 75% or more of its gross income is passive or if 50% or more of its assets produce passive income. Capital gains on the sale of an interest in a PFIC will be deemed ordinary income regardless of how long a fund held it. Also, a fund may be subject to corporate income tax and an interest charge on certain dividends and capital gains earned in respect to PFIC interests, whether or not such amounts are distributed to shareholders. To avoid such tax and interest, a fund may elect to “mark to market” its PFIC interests, that is, to treat such interests as sold on the last day of a fund’s fiscal year, and to recognize any unrealized gains (or losses, to the extent of previously recognized gains) as ordinary income (or loss) each year. Distributions from a fund that are attributable to income or gains earned in respect to PFIC interests are characterized as ordinary income.

Tax Matters—Real Estate Mortgage Investment Conduits. If a fund invests directly or indirectly, including through a REIT or other pass-through entity, in residual interests in real estate mortgage investment conduits (REMICs) or equity interests in taxable mortgage pools (TMPs), a portion of the fund’s income that is attributable to a residual interest in a REMIC or an equity interest in a TMP (such portion referred to in the IRC as an “excess inclusion”) will be subject to U.S. federal income tax in all events—including potentially at the fund level—under a notice issued by the IRS in October 2006 and U.S. Treasury regulations that have yet to be issued but may apply retroactively. This notice also provides, and the regulations are expected to provide, that excess inclusion income of a regulated investment company will be allocated to shareholders of the regulated investment company in proportion to the dividends received by such shareholders, with the same consequences as if the shareholders held the related interest directly. In general, excess inclusion income allocated to shareholders (1) cannot be offset by net operating losses (subject to a limited exception for certain thrift institutions); (2) will constitute unrelated business taxable income (UBTI) to entities (including a qualified pension plan, an individual retirement account, a 401(k) plan, a Keogh plan, or other tax-exempt entity) subject to tax on UBTI, thereby potentially requiring such an entity, which otherwise might not be required, to file a tax return and pay tax on such income; and (3) in the case of a non-U.S. investor, will not qualify for any reduction in U.S. federal withholding tax. A shareholder will be subject to U.S. federal income tax on such inclusions notwithstanding any exemption from such income tax otherwise available under the IRC. As a result, a fund investing in such interests may not be suitable for charitable remainder trusts. See “*Tax Matters—Tax-Exempt Investors.*”

Tax Matters—Tax Considerations for Non-U.S. Investors. U.S. withholding and estate taxes and certain U.S. tax reporting requirements may apply to any investments made by non-U.S. investors in Vanguard funds. Certain properly reported distributions of qualifying interest income or short-term capital gain made by a fund to its non-U.S. investors are exempt from U.S. withholding taxes, provided the investors furnish valid tax documentation (i.e., IRS Form W-8) certifying as to their non-U.S. status.

A fund is permitted, but is not required, to report any of its distributions as eligible for such relief, and some distributions (e.g., distributions of interest a fund receives from non-U.S. issuers) are not eligible for this relief. For some funds, Vanguard has chosen to report qualifying distributions and apply the withholding exemption to those distributions when made to non-U.S. shareholders who invest directly with Vanguard. For other funds, Vanguard may choose not to apply the withholding exemption to qualifying fund distributions made to direct shareholders, but may provide the reporting to such shareholders. In these cases, a shareholder may be able to reclaim such withholding tax directly from the IRS.

If shareholders hold fund shares (including ETF shares) through a broker or intermediary, their broker or intermediary may apply this relief to properly reported qualifying distributions made to shareholders with respect to those shares. If a shareholder's broker or intermediary instead collects withholding tax where the fund has provided the proper reporting, the shareholder may be able to reclaim such withholding tax from the IRS. Please consult your broker or intermediary regarding the application of these rules.

This relief does not apply to any withholding required under the Foreign Account Tax Compliance Act (FATCA), which generally requires a fund to obtain information sufficient to identify the status of each of its shareholders. If a shareholder fails to provide this information or otherwise fails to comply with FATCA, a fund may be required to withhold under FATCA at a rate of 30% with respect to that shareholder on fund distributions. Please consult your tax advisor for more information about these rules.

Tax Matters—Tax-Exempt Investors. Income of a fund that would be UBTI if earned directly by a tax-exempt entity will not generally be attributed as UBTI to a tax-exempt shareholder of the fund. Notwithstanding this "blocking" effect, a tax-exempt shareholder could realize UBTI by virtue of its investment in a fund if shares in the fund constitute debt-financed property in the hands of the tax-exempt shareholder within the meaning of IRC Section 514(b).

A tax-exempt shareholder may also recognize UBTI if a fund recognizes "excess inclusion income" derived from direct or indirect investments in residual interests in REMICs or equity interests in TMPs. See "*Tax Matters—Real Estate Mortgage Investment Conduits.*"

In addition, special tax consequences apply to charitable remainder trusts that invest in a fund that invests directly or indirectly in residual interests in REMICs or equity interests in TMPs. Charitable remainder trusts and other tax-exempt investors are urged to consult their tax advisors concerning the consequences of investing in a fund.

Time Deposits. Time deposits are subject to the same risks that pertain to domestic issuers of money market instruments, most notably credit risk (and, to a lesser extent, income risk, market risk, and liquidity risk). Additionally, time deposits of foreign branches of U.S. banks and foreign branches of foreign banks may be subject to certain sovereign risks. One such risk is the possibility that a sovereign country might prevent capital, in the form of U.S. dollars, from flowing across its borders. Other risks include adverse political and economic developments, the extent and quality of government regulation of financial markets and institutions, the imposition of foreign withholding taxes, and expropriation or nationalization of foreign issuers. However, time deposits of such issuers will undergo the same type of credit analysis as domestic issuers in which a Vanguard fund invests and will have at least the same financial strength as the domestic issuers approved for the fund.

Warrants. Warrants are instruments that give the holder the right, but not the obligation, to buy an equity security at a specific price for a specific period of time. Changes in the value of a warrant do not necessarily correspond to changes in the value of its underlying security. The price of a warrant may be more volatile than the price of its underlying security, and a warrant may offer greater potential for capital appreciation as well as capital loss. Warrants do not entitle a holder to dividends or voting rights with respect to the underlying security and do not represent any rights in the assets of the issuing company. A warrant ceases to have value if it is not exercised prior to its expiration date. These factors can make warrants more speculative than other types of investments. Other kinds of warrants exist, including, but not limited to, warrants linked to countries' economic performance or to commodity prices such as oil prices. These warrants may be subject to risk from fluctuation of underlying assets or indexes, as well as credit risk that the issuer does not pay on the obligations and risk that the data used for warrant payment calculation does not accurately reflect the true underlying commodity price or economic performance.

When-Issued, Delayed-Delivery, and Forward-Commitment Transactions. When-issued, delayed-delivery, and forward-commitment transactions involve a commitment to purchase or sell specific securities at a predetermined price or yield in which payment and delivery take place after the customary settlement period for that type of security. Typically, no interest accrues to the purchaser until the security is delivered. When purchasing securities pursuant to one of these transactions, payment for the securities is not required until the delivery date. However, the purchaser assumes the rights and risks of ownership, including the risks of price and yield fluctuations and the risk that the security will not be issued as anticipated. When a fund has sold a security pursuant to one of these transactions, the fund does not participate in further gains or losses with respect to the security. If the other party to a delayed-delivery transaction fails to deliver or pay for the securities, the fund could miss a favorable price or yield opportunity or suffer a loss. A fund may renegotiate a when-issued or forward-commitment transaction and may sell the underlying securities before delivery, which may result in capital gains or losses for the fund. When-issued, delayed-delivery, and forward-commitment transactions will not be considered to constitute the issuance, by a fund, of a “senior security,” as that term is defined in Section 18(g) of the 1940 Act, and therefore such transaction will not be subject to the 300% asset coverage requirement otherwise applicable to borrowings by the fund, if the fund complies with Rule 18f-4.

Regulatory Restrictions in India. Shares of Vanguard Emerging Markets Stock Index, FTSE All-World ex-US Index, FTSE All-World ex-US Small-Cap Index, Global ex-U.S. Real Estate Index, and Total World Stock Index Funds have not been, and will not be, registered under the laws of India and are not intended to benefit from any laws in India promulgated for the protection of shareholders. As a result of regulatory requirements in India, shares of the Funds shall not be knowingly offered to (directly or indirectly) or sold or delivered to (within India); transferred to or purchased by; or held by, for, on the account of, or for the benefit of (i) a “person resident in India” (as defined under applicable Indian law), (ii) an “overseas corporate body” or a “person of Indian origin” (as defined under applicable Indian law), or (iii) any other entity or person disqualified or otherwise prohibited from accessing the Indian securities market under applicable laws, as may be amended from time to time. Investors, prior to purchasing shares of the Funds, must satisfy themselves regarding compliance with these requirements.

SHARE PRICE

Multiple-class funds do not have a single share price. Rather, each class has a share price, also known as *net asset value* (NAV), which is calculated as of the close of regular trading on the New York Stock Exchange (NYSE), generally 4 p.m., Eastern time, on each day that the NYSE is open for business (a business day). In the rare event the NYSE experiences unanticipated disruptions and is unavailable at the close of the trading day, each Fund reserves the right to treat such day as a business day and calculate NAVs as of the close of regular trading on the Nasdaq (or another alternate exchange if the Nasdaq is unavailable, as determined at Vanguard’s discretion), generally 4 p.m., Eastern time. The NAV per share is computed by dividing the total assets, minus liabilities, allocated to the share class by the number of Fund shares outstanding for that class. On U.S. holidays or other days when the NYSE is closed, the NAV is not calculated, and the Funds do not sell or redeem shares. However, on those days the value of a Fund’s assets may be affected to the extent that the Fund holds securities that change in value on those days (such as foreign securities that trade on foreign markets that are open).

The NYSE typically observes the following holidays: New Year’s Day; Martin Luther King, Jr., Day; Presidents’ Day (Washington’s Birthday); Good Friday; Memorial Day; Juneteenth National Independence Day; Independence Day; Labor Day; Thanksgiving Day; and Christmas Day. Although each Fund expects the same holidays to be observed in the future, the NYSE may modify its holiday schedule or hours of operation at any time.

PURCHASE AND REDEMPTION OF SHARES

Purchase of Shares (Other than ETF Shares)

The purchase price of shares of each Fund is the NAV per share next determined after the purchase request is received in good order, as defined in the Fund’s prospectus.

The Funds (other than Vanguard Global ex-U.S. Real Estate Index Fund) do not charge purchase fees. The Global ex-U.S. Real Estate Index Fund charges a 0.25% purchase fee. The purchase fee is paid to the Fund to reimburse it for the transaction costs incurred from purchasing securities. The fee is deducted from all purchases, including shares purchased by exchange from other Vanguard funds. Information regarding the application of purchase fees is described more fully in the Fund’s prospectus.

Exchange of Securities for Shares of a Fund. Shares of a Fund may be purchased “in kind” (i.e., in exchange for securities, rather than for cash) at the discretion of the Fund’s portfolio manager. Such securities must not be restricted as to transfer and must have a value that is readily ascertainable. Securities accepted by the Fund will be valued, as set forth in the Fund’s prospectus, as of the time of the next determination of NAV after such acceptance. All dividend, subscription, or other rights that are reflected in the market price of accepted securities at the time of valuation become the property of the Fund and must be delivered to the Fund by the investor upon receipt from the issuer. A gain or loss for federal income tax purposes, depending upon the cost of the securities tendered, would be realized by the investor upon the exchange. Investors interested in purchasing fund shares in kind should contact Vanguard.

Redemption of Shares (Other than ETF Shares)

The redemption price of shares of each Fund is the NAV per share next determined after the redemption request is received in good order, as defined in the Fund’s prospectus.

Each Fund can postpone payment of redemption proceeds for up to seven calendar days. In addition, each Fund can suspend redemptions and/or postpone payments of redemption proceeds beyond seven calendar days (1) during any period that the NYSE is closed or trading on the NYSE is restricted as determined by the SEC; (2) during any period when an emergency exists, as defined by the SEC, as a result of which it is not reasonably practicable for the Fund to dispose of securities it owns or to fairly determine the value of its assets; or (3) for such other periods as the SEC may permit.

The Trust has filed a notice of election with the SEC to pay in cash all redemptions requested by any shareholder of record limited in amount during any 90-day period to the lesser of \$250,000 or 1% of the net assets of a Fund at the beginning of such period.

If Vanguard determines that it would be detrimental to the best interests of the remaining shareholders of a Fund to make payment wholly or partly in cash, the Fund may pay the redemption price in whole or in part by a distribution in kind of readily marketable securities held by the Fund in lieu of cash in conformity with applicable rules of the SEC and in accordance with procedures adopted by the Fund’s board of trustees. Investors may incur brokerage charges on the sale of such securities received in payment of redemptions.

The Funds (other than Vanguard Global ex-U.S. Real Estate Index Fund) do not charge redemption fees. There is a 0.25% redemption fee charged for redemptions from the Global ex-U.S. Real Estate Index Fund. The redemption fee is paid to the Fund to reimburse it for the transaction costs incurred from liquidating securities in order to meet fund redemptions. Information regarding the application of redemption fees is described more fully in the Fund’s prospectus. Shares redeemed may be worth more or less than what was paid for them, depending on the market value of the securities held by the Funds.

Vanguard processes purchase and redemption requests through a pooled account. Pending investment direction or distribution of redemption proceeds, the assets in the pooled account are invested and any earnings (the “float”) are allocated proportionately among the Vanguard funds in order to offset fund expenses. Other than the float, Vanguard treats assets held in the pooled account as the assets of each shareholder making such purchase or redemption request.

Right to Change Policies

Vanguard reserves the right, without notice, to (1) alter, add, or discontinue any conditions of purchase (including eligibility requirements), redemption, exchange, conversion, service, or privilege at any time and (2) alter, impose, discontinue, or waive any purchase fee, redemption fee, account service fee, or other fee charged to a shareholder or a group of shareholders. Changes may affect any or all investors. These actions will be taken when, at the sole discretion of Vanguard management, Vanguard believes they are in the best interest of a fund.

Account Restrictions

Vanguard reserves the right to: (1) redeem all or a portion of a fund/account to meet a legal obligation, including tax withholding, tax lien, garnishment order, or other obligation imposed on your account by a court or government agency; (2) redeem shares, close an account, or suspend account privileges, features, or options in the case of threatening conduct or activity; (3) redeem shares, close an account, or suspend account privileges, features, or options if Vanguard believes or suspects that not doing so could result in a suspicious, fraudulent, or illegal transaction; (4) place restrictions on the ability to redeem any or all shares in an account if it is required to do so by a court or government agency; (5)

place restrictions on the ability to redeem any or all shares in an account if Vanguard believes that doing so will prevent fraud or financial exploitation or abuse, or will protect vulnerable investors; (6) freeze any account and/or suspend account services if Vanguard has received reasonable notice of a dispute regarding the assets in an account, including notice of a dispute between the registered or beneficial account owners; and (7) freeze any account and/or suspend account services upon initial notification to Vanguard of the death of an account owner.

Investing With Vanguard Through Other Firms

Each Fund has authorized certain agents to accept on its behalf purchase and redemption orders, and those agents are authorized to designate other intermediaries to accept purchase and redemption orders on the Fund's behalf (collectively, Authorized Agents). The Fund will be deemed to have received a purchase or redemption order when an Authorized Agent accepts the order in accordance with the Fund's instructions. In most instances, a customer order that is properly transmitted to an Authorized Agent will be priced at the NAV per share next determined after the order is received by the Authorized Agent.

MANAGEMENT OF THE FUNDS

Vanguard

Each Fund is part of the Vanguard group of investment companies, which consists of over 200 funds. Each fund is a series of a Delaware statutory trust. The funds obtain virtually all of their corporate management, administrative, and distribution services through the trusts' jointly owned subsidiary, Vanguard. Vanguard may contract with certain third-party service providers to assist Vanguard in providing certain administrative and/or accounting services with respect to the funds, subject to Vanguard's oversight. Vanguard also provides investment advisory services to certain Vanguard funds. All of these services are provided at Vanguard's total cost of operations pursuant to the Fifth Amended and Restated Funds' Service Agreement (the Agreement).

Vanguard employs a supporting staff of management and administrative personnel needed to provide the requisite services to the funds and also furnishes the funds with necessary office space, furnishings, and equipment. Each fund (other than a fund of funds) pays its share of Vanguard's total expenses, which are allocated among the funds under methods approved by the board of trustees of each fund. In addition, each fund bears its own direct expenses, such as legal, auditing, and custodial fees.

Pursuant to an agreement between Vanguard and JP Morgan Chase Bank N.A. (JP Morgan), JP Morgan provides services for Vanguard Emerging Markets Stock Index Fund. These services include, but are not limited to: (i) the calculation of the fund's daily NAVs and (ii) the furnishing of financial reports. The fees paid to JP Morgan under this agreement are based on a combination of flat and asset based fees. As of the fiscal year ended October 31, 2022, JP Morgan had received fees from the Fund for administrative services rendered as shown in the table below.

Pursuant to an agreement between Vanguard and State Street Bank and Trust Company (State Street), State Street provides services for Vanguard European Stock Index Fund, Vanguard FTSE All-World ex-US Index Fund, Vanguard FTSE All-World ex-US Small-Cap Index Fund, Vanguard Global ex-U.S. Real Estate Index Fund, Vanguard Pacific Stock Index Fund, and Vanguard Total World Stock Index Fund. These services include, but are not limited to: (i) the calculation of such funds' daily NAVs and (ii) the furnishing of financial reports. The fees paid to State Street under this agreement are based on a combination of flat and asset based fees. During the fiscal years ended 2020, 2021, and 2022, State Street had received fees from the Funds for administrative services rendered as shown in the table below.

Vanguard Fund	2020	2021	2022
Vanguard Emerging Markets Stock Index Fund	\$4,249.99	\$16,999.92	\$16,999.91
Vanguard European Stock Index Fund	—	19,708.36	21,500.06
Vanguard FTSE All-World ex-US Index Fund	—	19,708.38	21,500.03
Vanguard FTSE All-World ex-US Small-Cap Index Fund	—	19,708.36	21,500.00
Vanguard Global ex-US Real Estate Index Fund	—	19,708.39	21,500.01
Vanguard Pacific Stock Index Fund	—	19,708.35	21,500.02
Vanguard Total World Stock Index Fund	—	19,708.36	21,500.03

The funds' officers are also employees of Vanguard.

Vanguard, Vanguard Marketing Corporation (VMC), the funds, and the funds' advisors have adopted codes of ethics designed to prevent employees who may have access to nonpublic information about the trading activities of the funds (access persons) from profiting from that information. The codes of ethics permit access persons to invest in securities for their own accounts, including securities that may be held by a fund, but place substantive and procedural restrictions on the trading activities of access persons. For example, the codes of ethics require that access persons receive advance approval for most securities trades to ensure that there is no conflict with the trading activities of the funds.

Vanguard was established and operates under the Agreement. The Agreement provides that each Vanguard fund may be called upon to invest up to 0.40% of its net assets in Vanguard. The amounts that each fund has invested are adjusted from time to time in order to maintain the proportionate relationship between each fund's relative net assets and its contribution to Vanguard's capital.

As of October 31, 2022, each Fund had contributed capital to Vanguard as follows:

Vanguard Fund	Capital Contribution to Vanguard	Percentage of Fund's Average Net Assets	Percent of Vanguard Funds' Contribution
Vanguard European Stock Index Fund	\$ 671,000	Less than 0.01%	0.27%
Vanguard Pacific Stock Index Fund	297,000	Less than 0.01	0.12
Vanguard Emerging Markets Stock Index Fund	3,449,000	Less than 0.01	1.38
Vanguard FTSE All-World ex-US Index Fund	1,665,000	Less than 0.01	0.67
Vanguard Total World Stock Index Fund	1,140,000	Less than 0.01	0.46
Vanguard FTSE All-World ex-US Small-Cap Index Fund	326,000	Less than 0.01	0.13
Vanguard Global ex-U.S. Real Estate Index Fund	157,000	Less than 0.01	0.06

Management. Corporate management and administrative services include (1) executive staff, (2) accounting and financial, (3) legal and regulatory, (4) shareholder account maintenance, (5) monitoring and control of custodian relationships, (6) shareholder reporting, and (7) review and evaluation of advisory and other services provided to the funds by third parties.

Distribution. Vanguard Marketing Corporation, 100 Vanguard Boulevard, Malvern, PA 19355, a wholly owned subsidiary of Vanguard, is the principal underwriter for the funds and in that capacity performs and finances marketing, promotional, and distribution activities (collectively, marketing and distribution activities) that are primarily intended to result in the sale of the funds' shares. VMC offers shares of each fund for sale on a continuous basis and will use all reasonable efforts in connection with the distribution of shares of the funds. VMC performs marketing and distribution activities in accordance with the conditions of a 1981 SEC exemptive order that permits the Vanguard funds to internalize and jointly finance the marketing, promotion, and distribution of their shares. The funds' trustees review and approve the marketing and distribution expenses incurred by the funds, including the nature and cost of the activities and the desirability of each fund's continued participation in the joint arrangement.

To ensure that each fund's participation in the joint arrangement falls within a reasonable range of fairness, each fund contributes to VMC's marketing and distribution expenses in accordance with an SEC-approved formula. Under that formula, one half of the marketing and distribution expenses are allocated among the funds based upon their relative net assets. The remaining half of those expenses is allocated among the funds based upon each fund's sales for the preceding 24 months relative to the total sales of the funds as a group, provided, however, that no fund's aggregate quarterly rate of contribution for marketing and distribution expenses shall exceed 125% of the average marketing and distribution expense rate for Vanguard and that no fund shall incur annual marketing and distribution expenses in excess of 0.20% of its average month-end net assets. Each fund's contribution to these marketing and distribution expenses helps to maintain and enhance the attractiveness and viability of the Vanguard complex as a whole, which benefits all of the funds and their shareholders.

VMC's principal marketing and distribution expenses are for advertising, promotional materials, and marketing personnel. Other marketing and distribution activities of an administrative nature that VMC undertakes on behalf of the funds may include, but are not limited to:

- Conducting or publishing Vanguard-generated research and analysis concerning the funds, other investments, the financial markets, or the economy.

- Providing views, opinions, advice, or commentary concerning the funds, other investments, the financial markets, or the economy.
- Providing analytical, statistical, performance, or other information concerning the funds, other investments, the financial markets, or the economy.
- Providing administrative services in connection with investments in the funds or other investments, including, but not limited to, shareholder services, recordkeeping services, and educational services.
- Providing products or services that assist investors or financial service providers (as defined below) in the investment decision-making process.

VMC performs most marketing and distribution activities itself. Some activities may be conducted by third parties pursuant to shared marketing arrangements under which VMC agrees to share the costs and performance of marketing and distribution activities in concert with a financial service provider. Financial service providers include, but are not limited to, investment advisors, broker-dealers, financial planners, financial consultants, banks, and insurance companies. Under these cost- and performance-sharing arrangements, VMC may pay or reimburse a financial service provider (or a third party it retains) for marketing and distribution activities that VMC would otherwise perform. VMC's cost- and performance-sharing arrangements may be established in connection with Vanguard investment products or services offered or provided to or through the financial service providers.

VMC's arrangements for shared marketing and distribution activities may vary among financial service providers, and its payments or reimbursements to financial service providers in connection with shared marketing and distribution activities may be significant. VMC, as a matter of policy, does not pay asset-based fees, sales-based fees, or account-based fees to financial service providers in connection with its marketing and distribution activities for the Vanguard funds. VMC does make fixed dollar payments to financial service providers when sponsoring, jointly sponsoring, financially supporting, or participating in conferences, programs, seminars, presentations, meetings, or other events involving fund shareholders, financial service providers, or others concerning the funds, other investments, the financial markets, or the economy, such as industry conferences, prospecting trips, due diligence visits, training or education meetings, and sales presentations. VMC also makes fixed dollar payments to financial service providers for data regarding funds, such as statistical information regarding sales of fund shares. In addition, VMC makes fixed dollar payments for expenses associated with financial service providers' use of Vanguard's funds including, but not limited to, the use of funds in model portfolios. These payments may be used for services including, but not limited to, technology support and development; platform support and development; due diligence related to products used on a platform; legal, regulatory, and compliance expenses related to a platform; and other platform-related services.

In connection with its marketing and distribution activities, VMC may give financial service providers (or their representatives) (1) promotional items of nominal value that display Vanguard's logo, such as golf balls, shirts, towels, pens, and mouse pads; (2) gifts that do not exceed \$100 per person annually and are not preconditioned on achievement of a sales target; (3) an occasional meal, a ticket to a sporting event or the theater, or comparable entertainment that is neither so frequent nor so extensive as to raise any question of propriety and is not preconditioned on achievement of a sales target; and (4) reasonable travel and lodging accommodations to facilitate participation in marketing and distribution activities.

VMC policy prohibits marketing and distribution activities that are intended, designed, or likely to compromise suitability determinations by, or the fulfillment of any fiduciary duties or other obligations that apply to, financial service providers. Nonetheless, VMC's marketing and distribution activities are primarily intended to result in the sale of the funds' shares, and as such, its activities, including shared marketing and distribution activities and fixed dollar payments as described above, may influence applicable financial service providers (or their representatives) to recommend, promote, include, or invest in a Vanguard fund or share class. In addition, Vanguard or any of its subsidiaries may retain a financial service provider to provide consulting or other services, and that financial service provider also may provide services to investors. Investors should consider the possibility that any of these activities, relationships, or payments may influence a financial service provider's (or its representatives') decision to recommend, promote, include, or invest in a Vanguard fund or share class. Each financial service provider should consider its suitability determinations, fiduciary duties, and other legal obligations (or those of its representatives) in connection with any decision to consider, recommend, promote, include, or invest in a Vanguard fund or share class.

The following table describes the expenses of Vanguard and VMC that are incurred by Funds. Amounts captioned “Management and Administrative Expenses” include a Fund’s allocated share of expenses associated with the management, administrative, and transfer agency services Vanguard provides to the Vanguard funds. Amounts captioned “Marketing and Distribution Expenses” include a Fund’s allocated share of expenses associated with the marketing and distribution activities that VMC conducts on behalf of the Vanguard funds.

As is the case with all mutual funds, transaction costs incurred by the Funds for buying and selling securities are not reflected in the table. Annual Shared Fund Operating Expenses are based on expenses incurred in the fiscal years ended October 31, 2020, 2021, and 2022, and are presented as a percentage of each Fund’s average month-end net assets.

**Annual Shared Fund Operating Expenses
(Shared Expenses Deducted From Fund Assets)**

Vanguard Fund	2020	2021	2022
Vanguard Emerging Markets Stock Index Fund			
Management and Administrative Expenses	0.08%	0.07%	0.06%
Marketing and Distribution Expenses	Less than 0.01	Less than 0.01	Less than 0.01
Vanguard European Stock Index Fund			
Management and Administrative Expenses	0.07%	0.08%	0.05%
Marketing and Distribution Expenses	Less than 0.01	Less than 0.01	Less than 0.01
Vanguard FTSE All-World ex-U.S. Index Fund			
Management and Administrative Expenses	0.07%	0.06%	0.06%
Marketing and Distribution Expenses	Less than 0.01	Less than 0.01	Less than 0.01
Vanguard FTSE All-World ex-U.S. Small-Cap Index Fund			
Management and Administrative Expenses	0.09%	0.05%	0.05%
Marketing and Distribution Expenses	Less than 0.01	Less than 0.01	Less than 0.01
Vanguard Global ex-U.S. Real Estate Index Fund			
Management and Administrative Expenses	0.09%	0.09%	0.09%
Marketing and Distribution Expenses	Less than 0.01	Less than 0.01	Less than 0.01
Vanguard Pacific Stock Index Fund			
Management and Administrative Expenses	0.07%	0.06%	0.06%
Marketing and Distribution Expenses	Less than 0.01	Less than 0.01	Less than 0.01
Vanguard Total World Stock Index Fund			
Management and Administrative Expenses	0.07%	0.06%	0.06%
Marketing and Distribution Expenses	Less than 0.01	Less than 0.01	Less than 0.01

Officers and Trustees

Each Vanguard fund is governed by the board of trustees of its trust and a single set of officers. Consistent with the board's corporate governance principles, the trustees believe that their primary responsibility is oversight of the management of each fund for the benefit of its shareholders, not day-to-day management. The trustees set broad policies for the funds; select investment advisors; monitor fund operations, regulatory compliance, performance, and costs; nominate and select new trustees; and elect fund officers. Vanguard manages the day-to-day operations of the funds under the direction of the board of trustees.

The trustees play an active role, as a full board and at the committee level, in overseeing risk management for the funds. The trustees delegate the day-to-day risk management of the funds to various groups, including portfolio review, investment management, risk management, compliance, legal, fund accounting, and fund financial services. These groups provide the trustees with regular reports regarding investment, valuation, liquidity, and compliance, as well as the risks associated with each. The trustees also oversee risk management for the funds through regular interactions with the funds' internal and external auditors.

The full board participates in the funds' risk oversight, in part, through the Vanguard funds' compliance program, which covers the following broad areas of compliance: investment and other operations; recordkeeping; valuation and pricing; communications and disclosure; reporting and accounting; oversight of service providers; fund governance; and codes of ethics, insider trading controls, and protection of nonpublic information. The program seeks to identify and assess risk through various methods, including through regular interdisciplinary communications between compliance professionals and business personnel who participate on a daily basis in risk management on behalf of the funds. The funds' chief compliance officer regularly provides reports to the board in writing and in person.

The audit committee of the board, which is composed of F. Joseph Loughrey, Mark Loughridge, Sarah Bloom Raskin, and Peter F. Volanakis, each of whom is an independent trustee, oversees management of financial risks and controls. The audit committee serves as the channel of communication between the independent auditors of the funds and the

board with respect to financial statements and financial reporting processes, systems of internal control, and the audit process. Vanguard’s head of internal audit reports directly to the audit committee and provides reports to the committee in writing and in person on a regular basis. Although the audit committee is responsible for overseeing the management of financial risks, the entire board is regularly informed of these risks through committee reports.

All of the trustees bring to each fund’s board a wealth of executive leadership experience derived from their service as executives (in many cases chief executive officers), board members, and leaders of diverse public operating companies, academic institutions, and other organizations. In determining whether an individual is qualified to serve as a trustee of the funds, the board considers a wide variety of information about the trustee, and multiple factors contribute to the board’s decision. Each trustee is determined to have the experience, skills, and attributes necessary to serve the funds and their shareholders because each trustee demonstrates an exceptional ability to consider complex business and financial matters, evaluate the relative importance and priority of issues, make decisions, and contribute effectively to the deliberations of the board. The board also considers the individual experience of each trustee and determines that the trustee’s professional experience, education, and background contribute to the diversity of perspectives on the board. The business acumen, experience, and objective thinking of the trustees are considered invaluable assets for Vanguard management and, ultimately, the Vanguard funds’ shareholders. The specific roles and experience of each board member that factor into this determination are presented on the following pages. The mailing address of the trustees and officers is P.O. Box 876, Valley Forge, PA 19482.

Name, Year of Birth	Position(s) Held With Funds	Vanguard Funds’ Trustee/ Officer Since	Principal Occupation(s) During the Past Five Years, Outside Directorships, and Other Experience	Number of Vanguard Funds Overseen by Trustee/Officer
Interested Trustee¹				
Mortimer J. Buckley (1969)	Chairman of the Board, Chief Executive Officer, and President	January 2018	Chairman of the board (2019–present) of Vanguard and of each of the investment companies served by Vanguard; chief executive officer (2018–present) of Vanguard; chief executive officer, president, and trustee (2018–present) of each of the investment companies served by Vanguard; president and director (2017–present) of Vanguard; and president (2018–present) of Vanguard Marketing Corporation. Chief investment officer (2013–2017), managing director (2002–2017), head of the Retail Investor Group (2006–2012), and chief information officer (2001–2006) of Vanguard. Trustee and vice chair of The Shipley School. Member of the board of governors of the Investment Company Institute and of FINRA.	206
Independent Trustees				
Tara Bunch (1962)	Trustee	November 2021	Head of Global Operations at Airbnb (2020–present). Vice President of AppleCare (2012–2020). Member of the board of Out & Equal, the University of California, Berkeley School of Engineering, and Santa Clara University’s School of Business.	206
Emerson U. Fullwood (1948)	Trustee	January 2008	Executive chief staff and marketing officer for North America and corporate vice president (retired 2008) of Xerox Corporation (document management products and services). Former president of the Worldwide Channels Group, Latin America, and Worldwide Customer Service and executive chief staff officer of Developing Markets of Xerox. Executive in residence and 2009–2010 Distinguished Minett Professor at the Rochester Institute of Technology. Member of the board of directors of the University of Rochester Medical Center, the Monroe Community College Foundation, the United Way of Rochester, North Carolina A&T University, Roberts Wesleyan College, and the Rochester Philharmonic Orchestra. Trustee of the University of Rochester.	206

¹ Mr. Buckley is considered an “interested person” as defined in the 1940 Act because he is an officer of the Trust.

Name, Year of Birth	Position(s) Held With Funds	Vanguard Funds' Trustee/ Officer Since	Principal Occupation(s) During the Past Five Years, Outside Directorships, and Other Experience	Number of Vanguard Funds Overseen by Trustee/Officer
F. Joseph Loughrey (1949)	Trustee	October 2009	President and chief operating officer (retired 2009) and vice chairman of the board (2008–2009) of Cummins Inc. (industrial machinery). Chairman of the board of Hillenbrand, Inc. (global industrial company). Director of the V Foundation. Member of the advisory council for the College of Arts and Letters at the University of Notre Dame. Chairman of the board of Saint Anselm College.	206
Mark Loughridge (1953)	Lead Independent Trustee	March 2012	Senior vice president and chief financial officer (retired 2013) of IBM (information technology services). Fiduciary member of IBM's Retirement Plan Committee (2004–2013), senior vice president and general manager (2002–2004) of IBM Global Financing, vice president and controller (1998–2002) of IBM, and a variety of other prior management roles at IBM. Member of the Council on Chicago Booth.	206
Scott C. Malpass (1962)	Trustee	March 2012	Chief investment officer and vice president of the University of Notre Dame (retired 2020). Chair of the board of Catholic Investment Services, Inc. (investment advisors). Member of the board of superintendence of the Institute for the Works of Religion. Member of the Notre Dame 403(b) Investment Committee and the board of directors of Paxos Trust Company (finance).	206
Deanna Mulligan (1963)	Trustee	January 2018	Chief executive officer of Purposeful (2021–present). Board chair (2020), chief executive officer (2011–2020), and president (2010–2019) of The Guardian Life Insurance Company of America. Chief operating officer (2010–2011) and executive vice president (2008–2010) of Individual Life and Disability of The Guardian Life Insurance Company of America. Director of DuPont. Member of the board of the Economic Club of New York. Trustee of the Partnership for New York City (business leadership), the Chief Executives for Corporate Purpose, and the New York-Presbyterian Hospital.	206
André F. Perold (1952)	Trustee	December 2004	George Gund Professor of Finance and Banking, Emeritus at the Harvard Business School (retired 2011). Chief investment officer and partner of HighVista Strategies LLC (private investment firm). Board member of RIT Capital Partners (investment firm).	206
Sarah Bloom Raskin (1961)	Trustee	January 2018	Deputy secretary (2014–2017) of the United States Department of the Treasury. Governor (2010–2014) of the Federal Reserve Board. Commissioner (2007–2010) of financial regulation for the State of Maryland. Colin W. Brown Distinguished Professor of the Practice, Duke Law School (2021–present); Rubenstein Fellow, Duke University (2017–2020); Distinguished Fellow of the Global Financial Markets Center, Duke Law School (2020–2022); and Senior Fellow, Duke Center on Risk (2020–present). Partner of Kaya Corporation Ltd. (climate policy advisory services). Member of the board of directors of Arcadia Corporation (energy solution technology).	206

Name, Year of Birth	Position(s) Held With Funds	Vanguard Funds' Trustee/ Officer Since	Principal Occupation(s) During the Past Five Years, Outside Directorships, and Other Experience	Number of Vanguard Funds Overseen by Trustee/Officer
David Thomas (1956)	Trustee	July 2021	President of Morehouse College (2018–present). Professor of Business Administration Emeritus at Harvard University (2017–2018) and Dean (2011–2016) and Professor of Management at Georgetown University, McDonough School of Business (2016–2017). Director of DTE Energy Company. Trustee of Common Fund.	206
Peter F. Volanakis (1955)	Trustee	July 2009	President and chief operating officer (retired 2010) of Corning Incorporated (communications equipment) and director of Corning Incorporated (2000–2010) and Dow Corning (2001–2010). Director (2012) of SPX Corporation (multi-industry manufacturing). Overseer of the Amos Tuck School of Business Administration, Dartmouth College (2001–2013). Member of the BMW Group Mobility Council.	206
Executive Officers				
Jacqueline Angell (1974)	Chief Compliance Officer	November 2022	Principal of Vanguard. Chief compliance officer (November 2022–present) of Vanguard and of each of the investment companies served by Vanguard. Chief compliance officer (2018–2022) and deputy chief compliance officer (2017–2019) of State Street.	206
Christine M. Buchanan (1970)	Chief Financial Officer	November 2017	Principal of Vanguard. Chief financial officer (2021–present) and treasurer (2017–2021) of each of the investment companies served by Vanguard. Partner (2005–2017) at KPMG (audit, tax, and advisory services).	206
John Galloway (1973)	Investment Stewardship Officer	September 2020	Principal of Vanguard. Investment stewardship officer (2020–present) of each of the investment companies served by Vanguard. Head of Investor Advocacy (2020–present) and head of Marketing Strategy and Planning (2017–2020) at Vanguard. Special Assistant to the President of the United States (2015).	206
Ashley Grim (1984)	Treasurer	February 2022	Treasurer (February 2022–present) of each of the investment companies served by Vanguard. Fund transfer agent controller (2019–2022) and director of Audit Services (2017–2019) at Vanguard. Senior manager (2015–2017) at PriceWaterhouseCoopers (audit and assurance, consulting, and tax services).	206
Peter Mahoney (1974)	Controller	May 2015	Principal of Vanguard. Controller (2015–present) of each of the investment companies served by Vanguard. Head of International Fund Services (2008–2014) at Vanguard.	206
Anne E. Robinson (1970)	Secretary	September 2016	General counsel (2016–present) of Vanguard. Secretary (2016–present) of Vanguard and of each of the investment companies served by Vanguard. Managing director (2016–present) of Vanguard. Managing director and general counsel of Global Cards and Consumer Services (2014–2016) at Citigroup. Counsel (2003–2014) at American Express. Non-executive director of the board of National Grid (energy).	206
Michael Rollings (1963)	Finance Director	February 2017	Finance director (2017–present) and treasurer (2017) of each of the investment companies served by Vanguard. Managing director (2016–present) of Vanguard. Chief financial officer (2016–present) of Vanguard. Director (2016–present) of Vanguard Marketing Corporation. Executive vice president and chief financial officer (2006–2016) of MassMutual Financial Group.	206

All but one of the trustees are independent. The independent trustees designate a lead independent trustee. The lead independent trustee is a spokesperson and principal point of contact for the independent trustees and is responsible for coordinating the activities of the independent trustees, including calling regular executive sessions of the independent trustees; developing the agenda of each meeting together with the chairman; and chairing the meetings of the independent trustees. The lead independent trustee also chairs the meetings of the audit, compensation, and nominating committees. The board also has two investment committees, which consist of independent trustees and the sole interested trustee.

The independent trustees appoint the chairman of the board. The roles of chairman of the board and chief executive officer currently are held by the same person; as a result, the chairman of the board is an “interested” trustee. The independent trustees generally believe that the Vanguard funds’ chief executive officer is best qualified to serve as chairman and that fund shareholders benefit from this leadership structure through accountability and strong day-to-day leadership.

Board Committees: The Trust’s board has the following committees:

- **Audit Committee:** This committee oversees the accounting and financial reporting policies, the systems of internal controls, and the independent audits of each fund. The following independent trustees serve as members of the committee: Mr. Loughrey, Mr. Loughridge, Ms. Raskin, and Mr. Volanakis. The committee held six meetings during the Trust’s fiscal year ended October 31, 2022.
- **Compensation Committee:** This committee oversees the compensation programs established by each fund for the benefit of its trustees. All independent trustees serve as members of the committee. The committee held two meetings during the Trust’s fiscal year ended October 31, 2022.
- **Investment Committees:** These committees assist the board in its oversight of investment advisors to the funds and in the review and evaluation of materials relating to the board’s consideration of investment advisory agreements with the funds. Each trustee serves on one of two investment committees. Each investment committee held four meetings during the Trust’s fiscal year ended October 31, 2022.
- **Nominating Committee:** This committee nominates candidates for election to the board of trustees of each fund. The committee also has the authority to recommend the removal of any trustee. All independent trustees serve as members of the committee. The committee held five meetings during the Trust’s fiscal year ended October 31, 2022.

The Nominating Committee will consider shareholder recommendations for trustee nominees. Shareholders may send recommendations to Mr. Loughridge, chairman of the committee.

Trustees retire in accordance with the funds’ governing documents and policies, and typically by age 75.

Trustee Compensation

The same individuals serve as trustees of all Vanguard funds and each fund pays a proportionate share of the trustees’ compensation. Vanguard funds also employ their officers on a shared basis; however, officers are compensated by Vanguard, not the funds.

Independent Trustees. The funds compensate their independent trustees (i.e., the ones who are not also officers of the funds) in two ways:

- The independent trustees receive an annual fee for their service to the funds, which is subject to reduction based on absences from scheduled board meetings.
- The independent trustees are reimbursed for the travel and other expenses that they incur in attending board meetings.

“Interested” Trustee. Mr. Buckley serves as a trustee, but is not paid in this capacity. He is, however, paid in his role as an officer of Vanguard.

Compensation Table. The following table provides compensation details for each of the trustees. We list the amounts paid as compensation by the Funds for each trustee. In addition, the table shows the total amount of compensation paid to each trustee by all Vanguard funds.

**VANGUARD INTERNATIONAL EQUITY INDEX FUNDS
TRUSTEES' COMPENSATION TABLE**

Trustee	Aggregate Compensation From the Funds¹	Total Compensation From All Vanguard Funds Paid to Trustees²
Mortimer J. Buckley	—	—
Tara Bunch ³	\$ 8,571	\$330,000
Emerson U. Fullwood	8,571	330,000
Amy Gutmann ⁴	1,428	—
F. Joseph Loughrey	9,090	350,000
Mark Loughridge	10,386	400,000
Scott C. Malpass	8,571	330,000
Deanna Mulligan	8,571	330,000
André F. Perold	8,571	330,000
Sarah Bloom Raskin	9,090	350,000
David A. Thomas	8,571	330,000
Peter F. Volanakis	9,090	350,000

1 The amounts shown in this column are based on the Trust's fiscal year ended October 31, 2022. Each Fund within the Trust is responsible for a proportionate share of these amounts.

2 The amounts reported in this column reflect the total compensation paid to each trustee for his or her service as trustee of 206 Vanguard funds for the 2022 calendar year.

3 Ms. Bunch became a member of the Funds' board effective November 2021.

4 Ms. Gutmann retired from service effective February 2022.

Ownership of Fund Shares

All current trustees allocate their investments among the various Vanguard funds based on their own investment needs. The following table shows each trustee's ownership of shares of each Fund and of all Vanguard funds served by the trustee as of December 31, 2022.

VANGUARD INTERNATIONAL EQUITY INDEX FUNDS

Vanguard Fund	Trustee	Dollar Range of Fund Shares Owned by Trustee	Aggregate Dollar Range of Vanguard Fund Shares Owned by Trustee
Vanguard Emerging Markets Stock Index Fund	Mortimer J. Buckley	Over \$100,000	Over \$100,000
	Tara Bunch	—	Over \$100,000
	Emerson U. Fullwood	\$10,001 – \$50,000	Over \$100,000
	F. Joseph Loughrey	—	Over \$100,000
	Mark Loughridge	—	Over \$100,000
	Scott C. Malpass	\$1 – \$10,000	Over \$100,000
	Deanna Marie Mulligan	—	Over \$100,000
	André F. Perold	Over \$100,000	Over \$100,000
	Sarah Bloom Raskin	\$50,001 – \$100,000	Over \$100,000
	David A. Thomas	—	Over \$100,000
	Peter F. Volanakis	\$1 – \$10,000	Over \$100,000

Vanguard Fund	Trustee	Dollar Range of Fund Shares Owned by Trustee	Aggregate Dollar Range of Vanguard Fund Shares Owned by Trustee
Vanguard European Stock Index Fund	Mortimer J. Buckley	Over \$100,000	Over \$100,000
	Tara Bunch	—	Over \$100,000
	Emerson U. Fullwood	—	Over \$100,000
	F. Joseph Loughrey	—	Over \$100,000
	Mark Loughridge	—	Over \$100,000
	Scott C. Malpass	—	Over \$100,000
	Deanna Marie Mulligan	—	Over \$100,000
	André F. Perold	—	Over \$100,000
	Sarah Bloom Raskin	—	Over \$100,000
	David A. Thomas	—	Over \$100,000
Peter F. Volanakis	—	Over \$100,000	
Vanguard FTSE All-World ex-US Index Fund	Mortimer J. Buckley	Over \$100,000	Over \$100,000
	Tara Bunch	—	Over \$100,000
	Emerson U. Fullwood	—	Over \$100,000
	F. Joseph Loughrey	—	Over \$100,000
	Mark Loughridge	Over \$100,000	Over \$100,000
	Scott C. Malpass	—	Over \$100,000
	Deanna Marie Mulligan	—	Over \$100,000
	André F. Perold	—	Over \$100,000
	Sarah Bloom Raskin	—	Over \$100,000
	David A. Thomas	—	Over \$100,000
Peter F. Volanakis	Over \$100,000	Over \$100,000	
Vanguard FTSE All-World ex-US Small-Cap Index Fund	Mortimer J. Buckley	Over \$100,000	Over \$100,000
	Tara Bunch	—	Over \$100,000
	Emerson U. Fullwood	—	Over \$100,000
	F. Joseph Loughrey	—	Over \$100,000
	Mark Loughridge	—	Over \$100,000
	Scott C. Malpass	—	Over \$100,000
	Deanna Marie Mulligan	—	Over \$100,000
	André F. Perold	—	Over \$100,000
	Sarah Bloom Raskin	—	Over \$100,000
	David A. Thomas	—	Over \$100,000
Peter F. Volanakis	—	Over \$100,000	
Vanguard Global ex-US Real Estate Index Fund	Mortimer J. Buckley	—	Over \$100,000
	Tara Bunch	—	Over \$100,000
	Emerson U. Fullwood	—	Over \$100,000
	F. Joseph Loughrey	—	Over \$100,000
	Mark Loughridge	—	Over \$100,000
	Scott C. Malpass	—	Over \$100,000
	Deanna Marie Mulligan	—	Over \$100,000
	André F. Perold	—	Over \$100,000
	Sarah Bloom Raskin	—	Over \$100,000
	David A. Thomas	—	Over \$100,000
Peter F. Volanakis	—	Over \$100,000	

Vanguard Fund	Trustee	Dollar Range of Fund Shares Owned by Trustee	Aggregate Dollar Range of Vanguard Fund Shares Owned by Trustee
Vanguard Pacific Stock Index Fund	Mortimer J. Buckley	—	Over \$100,000
	Tara Bunch	—	Over \$100,000
	Emerson U. Fullwood	—	Over \$100,000
	F. Joseph Loughrey	—	Over \$100,000
	Mark Loughridge	—	Over \$100,000
	Scott C. Malpass	—	Over \$100,000
	Deanna Marie Mulligan	—	Over \$100,000
	André F. Perold	—	Over \$100,000
	Sarah Bloom Raskin	—	Over \$100,000
	David A. Thomas	—	Over \$100,000
Peter F. Volanakis	—	Over \$100,000	
Vanguard Total World Stock Index Fund	Mortimer J. Buckley	—	Over \$100,000
	Tara Bunch	—	Over \$100,000
	Emerson U. Fullwood	—	Over \$100,000
	F. Joseph Loughrey	—	Over \$100,000
	Mark Loughridge	—	Over \$100,000
	Scott C. Malpass	—	Over \$100,000
	Deanna Marie Mulligan	—	Over \$100,000
	André F. Perold	—	Over \$100,000
	Sarah Bloom Raskin	—	Over \$100,000
	David A. Thomas	—	Over \$100,000
Peter F. Volanakis	—	Over \$100,000	

As of January 31, 2023, the trustees and officers of the funds owned, in the aggregate, less than 1% of each class of each fund's outstanding shares.

As of January 31, 2023, the following owned of record 5% or more of the outstanding shares of each class (Other than ETF Shares):

Vanguard Fund	Share Class	Owner and Address	Percentage of Ownership
Vanguard Emerging Markets Index Fund	Institutional Plus Shares	CHARLES SCHWAB & CO INC SAN FRANCISCO, CA	6.46%
		FIDELITY INVESTMENTS	5.2%
		INSTITUTIONAL OPERATIONS CO INC COVINGTON, KY	
		GOOGLE LLC 401(K) SAVINGS PLAN MOUNTAIN VIEW, CA	9.14%
		MAC & CO PITTSBURG, PA	12.98%
		MBB PUBLIC MARKETS I LLC CHICAGO, IL	5.99%
		NORTHERN TRUST CO TR FBO ACCENTURE-DV CHICAGO, IL	6.07%
		TIAA, FSB SAINT LOUIS, MO	12.96%

Vanguard Fund	Share Class	Owner and Address	Percentage of Ownership	
Vanguard Emerging Markets Stock Index Fund	Admiral Shares	CHARLES SCHWAB & CO INC SAN FRANCISCO, CA	8.49%	
		NATIONAL FINANCIAL SERVICES CORPORATION JERSEY CITY, NJ	7.43%	
	Institutional Shares	CHARLES SCHWAB & CO INC SAN FRANCISCO, CA	9.12%	
		FIDELITY INVESTMENTS INSTITUTIONAL OPERATIONS CO INC COVINGTON, KY	6.35%	
		NATIONAL FINANCIAL SERVICES CORPORATION JERSEY CITY, NJ	14.4%	
		TIAA, FSB SAINT LOUIS, MO	11%	
	Investor Shares	ASCENSUS TRUST COMPANY VANGUARD HOUSE ACCOUNT FRONTIER PRO 222222 FARGO, ND	28.3%	
		VANGUARD MANAGED ALLOCATION FUND VALLEY FORGE, PA	27.25%	
	Vanguard European Stock Index Fund	Admiral Shares	CHARLES SCHWAB & CO INC SAN FRANCISCO, CA	5.98%
			NATIONAL FINANCIAL SERVICES CORPORATION JERSEY CITY, NJ	5.09%
Institutional Shares		MARC LAUKIEN MIAMI BEACH, FL	5.08%	
		NATIONAL FINANCIAL SERVICES CORPORATION JERSEY CITY, NJ	31.98%	
		VANGUARD CHARITABLE PROGRAM EUROPEAN STOCK INDEX SELECT POOL SOUTHEASTERN, PA	8.17%	
Investor Shares		ASCENSUS TRUST COMPANY VANGUARD HOUSE ACCOUNT FRONTIER PRO 222222 FARGO, ND	15.57%	
		BRIGHTSPHERE INC PROFIT SHARING AND 401(K) PLAN BOSTON, MA	6.3%	
		MEMORIAL HEALTH SERVICES 403(B) TAX SHELTERED ANNUITY PLAN FOUNTAIN VALLEY, CA	5.01%	
		ORM 401(K) RETIREMENT SAVINGS PLAN CHICAGO, IL	8.61%	
		SLMA RETIREMENT SAVINGS PLAN OAKBROOK TERRACE, IL	7.5%	
		THE NATIONAL EDUCATION ASSOCIATION 401(K) RETIREMENT SAVINGS PLAN WASHINGTON, DC	11.34%	
		UNIVERSITY OF MINNESOTA OPTIONAL RETIREMENT PLAN MINNEAPOLIS, MN	6.93%	
		Institutional Plus Shares	ANGELA WILLIAMS DULUTH, GA	15.3%
ARTHUR WILLIAMS DULUTH, GA			84.7%	

Vanguard Fund	Share Class	Owner and Address	Percentage of Ownership	
Vanguard FTSE All-World ex-US Index Fund	Admiral Shares	CHARLES SCHWAB & CO INC SAN FRANCISCO, CA	9.3%	
		NATIONAL FINANCIAL SERVICES CORPORATION JERSEY CITY, NJ	5.38%	
	Institutional Shares	FIDELITY INVESTMENTS INSTITUTIONAL OPERATIONS CO INC COVINGTON, KY	6.31%	
		NATIONAL FINANCIAL SERVICES CORPORATION JERSEY CITY, NJ	11.56%	
	Institutional Plus Shares	ADOBE INC. 401(K) RETIREMENT SAVINGS PLAN SAN JOSE, CA	6.75%	
		ANHEUSER-BUSCH 401(K) SAVINGS AND RETIREMENT PLAN SAINT LOUIS, MO	7.68%	
		DRISCOLL CHILDRENS HOSPITAL CORPUS CHRISTI, TX	18.33%	
		DRISCOLL ENDOWMENT FUND CORPUS CHRISTI, TX	7.68%	
		SCIENCE APPLICATIONS INTERNATIONAL CORPORATION RETIREMENT PLAN RESTON, VA	5.32%	
		THE DAVIS FAMILY FOUNDATION HANOVER, MD	5.66%	
		TOYOTA MOTOR INSURANCE SERVICES INC PLANO, TX	10.76%	
	Vanguard FTSE All-World ex-US Small-Cap Index Fund	Admiral Shares	CHARLES SCHWAB & CO INC SAN FRANCISCO, CA	13.17%
		Institutional Shares	CHARLES SCHWAB & CO INC SAN FRANCISCO, CA	15.19%
NATIONAL FINANCIAL SERVICES CORPORATION JERSEY CITY, NJ			33.75%	
NORTSHORE UNIVERSITY HEALTHSYSTEM EVANSTON, IL			10.21%	
PENSIONSKASSE SWISS COCKPIT GESCHAFTSSTELLE GLATTBRUGG, SWITZERLAND			10.88%	
SEI PRIVATE TRUST COMPANY OAKS, PA			7.28%	
TD AMERITRADE INC OMAHA, NE			6.83%	
Vanguard Global ex-U.S. Real Estate Index Fund	Admiral Shares	CHARLES SCHWAB & CO INC SAN FRANCISCO, CA	10.99%	
	Institutional Shares	CFA INSTITUTE - CONTINGENCY RESERVE CHARLOTTESVILLE, VA	5.09%	
		THE NORTHERN TRUST COMPANY FBO MILTON HERSHEY SCHOOL TRUST 4413857 CHICAGO, IL	76.75%	
		THE NORTHERN TRUST COMPANY FBO MILTON HERSHEY SCHOOL TRUST 4413859 CHICAGO, IL	6.23%	
		WASHINGTON SUBURBAN SANITARY COMMISSION EMPLOYEES RETIREMENT PLAN LAUREL, MD	11.84%	

Vanguard Fund	Share Class	Owner and Address	Percentage of Ownership		
Vanguard Pacific Stock Index Fund	Admiral Shares	CHARLES SCHWAB & CO INC SAN FRANCISCO, CA	5.02%		
		Institutional Shares	CHARLES SCHWAB & CO INC SAN FRANCISCO, CA	15.13%	
	Investor Shares	FARM BUREAU LIFE INSURANCE COMPANY LANSING, MI	5.66%		
		VANGUARD CHARITABLE PROGRAM PACIFIC STOCK INDEX SELECT POOL SOUTHEASTERN, PA	11.43%		
		BRIGHTSPHERE INC PROFIT SHARING AND 401(K) PLAN BOSTON, MA	7.77%		
		C.V. STARR & CO INC INCENTIVE SAVINGS PLAN NEW YORK, NY	17.46%		
		ORM 401(K) RETIREMENT SAVINGS PLAN CHICAGO, IL	6.53%		
		ASCENSUS TRUST COMPANY VANGUARD HOUSE ACCOUNT FRONTIER PRO 222222 FARGO, ND	12.02%		
		SHARTSIS FRIESE LLP PROFIT SHARING/401(K) PLAN SAN FRANCISCO, CA	7.91%		
		THE NATIONAL EDUCATION ASSOCIATION 401(K) RETIREMENT SAVINGS PLAN WASHINGTON, DC	9.06%		
		Vanguard Total World Stock Index Fund	Admiral Shares	ASCENSUS TRUST COMPANY FARGO, ND	7.13%
				NATIONAL FINANCIAL SERVICES CORPORATION JERSEY CITY, NJ	7.48%
Institutional Shares	JOHN TEMPLETON FOUNDATION CONSHOHOCKEN, PA		5.62%		
	JP MORGAN SECURITIES LLC BROOKLYN, NY		7.97%		
	NATIONAL FINANCIAL SERVICES CORPORATION JERSEY CITY, NJ		16.16%		
	TIAA, FSB SAINT LOUIS, MO		5.2%		
US BANK NA CAPINCO C/O US BANK NA MILWAUKEE, WI	8.37%				

Although the Funds do not have information concerning the beneficial ownership of shares held in the names of Depository Trust Company (DTC) participants, as of January 31, 2023, the name and percentage ownership of each DTC participant that owned of record 5% or more of the outstanding ETF Shares of the Fund were as follows:

Vanguard Fund	Owner	Percentage of Ownership
Vanguard FTSE All-World ex-US ETF	Charles Schwab & Co., Inc.	14%
	Edward D. Jones & Co.	5.14%
	Morgan Stanley DW Inc.	5.17%
	National Financial Services, LLC	8.38%
	Vanguard Marketing Corporation	17.43%
Vanguard FTSE All-World ex-US Small-Cap ETF	Charles Schwab & Co., Inc.	20.78%
	Edward D. Jones & Co.	22.08%
	National Financial Services, LLC	12.12%
	Pershing, LLC	8.62%
	TD Ameritrade Clearing, Inc.	8.37%
Vanguard Marketing Corporation	7.47%	

Vanguard Fund	Owner	Percentage of Ownership
Vanguard FTSE Emerging Markets ETF	Charles Schwab & Co., Inc.	12.33%
	National Financial Services, LLC	9.46%
	Pershing, LLC	7.42%
	TD Ameritrade Clearing, Inc.	5.46%
	The Northern Trust Company	5.51%
Vanguard FTSE Europe ETF	Charles Schwab & Co., Inc.	8.78%
	J.P. Morgan Clearing Corp.	5.82%
	JPMorgan Chase Bank, N.A.	9.25%
	Morgan Stanley DW Inc.	7.14%
	National Financial Services, LLC	10.54%
Vanguard FTSE Pacific ETF	State Street Bank and Trust Company	9.53%
	Charles Schwab & Co., Inc.	12.5%
	Citibank, N.A.	9.11%
	JMS, LLC	5.27%
	Merrill Lynch, Pierce, Fenner & Smith	6.06%
Vanguard Global ex-U.S. Real Estate ETF	Morgan Stanley DW Inc.	5.5%
	National Financial Services, LLC	16.43%
	State Street Bank and Trust Company	6.45%
	Vanguard Marketing Corporation	5.93%
	Charles Schwab & Co., Inc.	26.69%
Vanguard Total World Stock ETF	JPMorgan Chase Bank, N.A.	5.85%
	National Financial Services, LLC	12.51%
	Pershing, LLC	16.48%
	Vanguard Marketing Corporation	7%
	Charles Schwab & Co., Inc.	12.05%
	INT BROKER	6.09%
	National Financial Services, LLC	8.66%
	SUMI MITSU	5.57%
	Vanguard Marketing Corporation	7.29%

Portfolio Holdings Disclosure Policies and Procedures

Introduction

Vanguard and the boards of trustees of the Vanguard funds (the Boards) have adopted Portfolio Holdings Disclosure Policies and Procedures (Policies and Procedures) to govern the disclosure of the portfolio holdings of each Vanguard fund. Vanguard and the Boards considered each of the circumstances under which Vanguard fund portfolio holdings may be disclosed to different categories of persons under the Policies and Procedures. Vanguard and the Boards also considered actual and potential material conflicts that could arise in such circumstances between the interests of Vanguard fund shareholders, on the one hand, and those of the fund's investment advisor, distributor, or any affiliated person of the fund, its investment advisor, or its distributor, on the other. After giving due consideration to such matters and after the exercise of their fiduciary duties and reasonable business judgment, Vanguard and the Boards determined that the Vanguard funds have a legitimate business purpose for disclosing portfolio holdings to the persons described in each of the circumstances set forth in the Policies and Procedures and that the Policies and Procedures are reasonably designed to ensure that disclosure of portfolio holdings and information about portfolio holdings is in the best interests of fund shareholders and appropriately addresses the potential for material conflicts of interest.

The Boards exercise continuing oversight of the disclosure of Vanguard fund portfolio holdings by (1) overseeing the implementation and enforcement of the Policies and Procedures, the Code of Ethics, and the Policies and Procedures Designed to Prevent the Misuse of Inside Information (collectively, the portfolio holdings governing policies) by the

chief compliance officer of Vanguard and the Vanguard funds; (2) considering reports and recommendations by the chief compliance officer concerning any material compliance matters (as defined in Rule 38a-1 under the 1940 Act and Rule 206(4)-7 under the Investment Advisers Act of 1940) that may arise in connection with any portfolio holdings governing policies; and (3) considering whether to approve or ratify any amendment to any portfolio holdings governing policies.

Vanguard and the Boards reserve the right to amend the Policies and Procedures at any time and from time to time without prior notice at their sole discretion. For purposes of the Policies and Procedures, the term “portfolio holdings” means the equity and debt securities (e.g., stocks and bonds) held by a Vanguard fund and does not mean the cash investments, derivatives, and other investment positions (collectively, other investment positions) held by the fund.

Online Disclosure of Ten Largest Stock Holdings

Each actively managed Vanguard fund generally will seek to disclose the fund’s ten largest stock portfolio holdings and the percentage of the fund’s total assets that each of these holdings represents as of the end of the most recent calendar quarter (quarter-end ten largest stock holdings with weightings) online at *vanguard.com*, in the “Portfolio” section of the fund’s Portfolio & Management page, 15 calendar days after the end of the calendar quarter. Each Vanguard index fund generally will seek to disclose the fund’s ten largest stock portfolio holdings and the percentage of the fund’s total assets that each of these holdings represents as of the end of the most recent month (month-end ten largest stock holdings with weightings) online at *vanguard.com*, in the “Portfolio” section of the fund’s Portfolio & Management page, 15 calendar days after the end of the month. In addition, Vanguard funds generally will seek to disclose the fund’s ten largest stock portfolio holdings and the aggregate percentage of the fund’s total assets (and, for balanced funds, the aggregate percentage of the fund’s equity securities) that these holdings represent as of the end of the most recent month (month-end ten largest stock holdings) online at *vanguard.com*, in the “Portfolio” section of the fund’s Portfolio & Management page, 10 business days after the end of the month. Together, the quarter-end and month-end ten largest stock holdings are referred to as the ten largest stock holdings. Online disclosure of the ten largest stock holdings is made to all categories of persons, including individual investors, institutional investors, intermediaries, third-party service providers, rating and ranking organizations, affiliated persons of a Vanguard fund, and all other persons.

Online Disclosure of Complete Portfolio Holdings

Each actively managed Vanguard fund, unless otherwise stated, generally will seek to disclose the fund’s complete portfolio holdings as of the end of the most recent calendar quarter online at *vanguard.com* 30 calendar days after the end of the calendar quarter. Each Vanguard fund relying on Rule 6c-11 under the 1940 Act generally will seek to disclose complete portfolio holdings, including other investment positions, at the beginning of each business day. These portfolio holdings, including other investment positions, will be disclosed online at *vanguard.com*. In accordance with Rule 2a-7 under the 1940 Act, each of the Vanguard money market funds will disclose the fund’s complete portfolio holdings as of the last business day of the prior month online at *vanguard.com* no later than the fifth business day of the current month. The complete portfolio holdings information for money market funds will remain available online for at least six months after the initial posting. Vanguard Market Neutral Fund and Vanguard Alternative Strategies Fund generally will seek to disclose the Fund’s complete portfolio holdings as of the end of the most recent calendar quarter online at *vanguard.com* 60 calendar days after the end of the calendar quarter. Each Vanguard index fund, other than those Vanguard index funds relying on Rule 6c-11 under the 1940 Act, generally will seek to disclose the fund’s complete portfolio holdings as of the end of the most recent month online at *vanguard.com*, in the “Portfolio” section of the fund’s Portfolio & Management page, 15 calendar days after the end of the month. Online disclosure of complete portfolio holdings is made to all categories of persons, including individual investors, institutional investors, intermediaries, third-party service providers, rating and ranking organizations, affiliated persons of a Vanguard fund, and all other persons. Vanguard will review complete portfolio holdings before disclosure is made and, except with respect to the complete portfolio holdings of the Vanguard money market funds, may withhold any portion of the fund’s complete portfolio holdings from disclosure when deemed to be in the best interests of the fund after consultation with a Vanguard fund’s investment advisor.

Disclosure of Complete Portfolio Holdings to Service Providers Subject to Confidentiality and Trading Restrictions

Vanguard, for legitimate business purposes, may disclose Vanguard fund complete portfolio holdings at times it deems necessary and appropriate to rating and ranking organizations; financial printers; proxy voting service providers; pricing information vendors; issuers of guaranteed investment contracts for stable value portfolios; third parties that deliver

analytical, statistical, or consulting services; and other third parties that provide services (collectively, Service Providers) to Vanguard, Vanguard subsidiaries, and/or the Vanguard funds. Disclosure of complete portfolio holdings to a Service Provider is conditioned on the Service Provider being subject to a written agreement imposing a duty of confidentiality, including a duty not to trade on the basis of any material nonpublic information.

The frequency with which complete portfolio holdings may be disclosed to a Service Provider, and the length of the lag, if any, between the date of the information and the date on which the information is disclosed to the Service Provider, is determined based on the facts and circumstances, including, without limitation, the nature of the portfolio holdings information to be disclosed, the risk of harm to the funds and their shareholders, and the legitimate business purposes served by such disclosure. The frequency of disclosure to a Service Provider varies and may be as frequent as daily, with no lag. Disclosure of Vanguard fund complete portfolio holdings by Vanguard to a Service Provider must be authorized by a Vanguard fund officer or a Principal in Vanguard's Portfolio Review Department or Office of the General Counsel. Any disclosure of Vanguard fund complete portfolio holdings to a Service Provider as previously described may also include a list of the other investment positions that make up the fund, such as cash investments and derivatives.

Currently, Vanguard discloses complete portfolio holdings to the following Service Providers as part of ongoing arrangements that serve legitimate business purposes: Abel/Noser Corporation; Advisor Software, Inc.; Alcom Printing Group, Inc.; Apple Press, L.C.; Bloomberg L.P.; Brilliant Graphics, Inc.; Broadridge Financial Solutions, Inc.; Brown Brothers Harriman & Co.; Charles River Systems, Inc.; FactSet Research Systems Inc.; Innovation Printing & Communications; Institutional Shareholder Services, Inc.; Intelligencer Printing Company; Investment Technology Group, Inc.; Lipper, Inc.; Markit WSO Corporation; McMunn Associates, Inc.; Reuters America Inc.; R.R. Donnelley, Inc.; State Street Bank and Trust Company; and Trade Informatics LLC.

Disclosure of Complete Portfolio Holdings to Vanguard Affiliates and Certain Fiduciaries Subject to Confidentiality and Trading Restrictions

Vanguard may disclose complete portfolio holdings between and among the following persons (collectively, Affiliates and Fiduciaries) for legitimate business purposes within the scope of their official duties and responsibilities, subject to such persons' continuing legal duty of confidentiality and legal duty not to trade on the basis of any material nonpublic information, as such duties are imposed under the Code of Ethics, the Policies and Procedures Designed to Prevent the Misuse of Inside Information, by agreement, or under applicable laws, rules, and regulations: (1) persons who are subject to the Code of Ethics or the Policies and Procedures Designed to Prevent the Misuse of Inside Information; (2) an investment advisor, distributor, administrator, transfer agent, or custodian to a Vanguard fund; (3) an accounting firm, an auditing firm, or outside legal counsel retained by Vanguard, a Vanguard subsidiary, or a Vanguard fund; (4) an investment advisor to whom complete portfolio holdings are disclosed for due diligence purposes when the advisor is in merger or acquisition talks with a Vanguard fund's current advisor; and (5) a newly hired investment advisor or sub-advisor to whom complete portfolio holdings are disclosed prior to the time it commences its duties.

The frequency with which complete portfolio holdings may be disclosed between and among Affiliates and Fiduciaries, and the length of the lag, if any, between the date of the information and the date on which the information is disclosed between and among the Affiliates and Fiduciaries, is determined by such Affiliates and Fiduciaries based on the facts and circumstances, including, without limitation, the nature of the portfolio holdings information to be disclosed, the risk of harm to the funds and their shareholders, and the legitimate business purposes served by such disclosure. The frequency of disclosure between and among Affiliates and Fiduciaries varies and may be as frequent as daily, with no lag. Any disclosure of Vanguard fund complete portfolio holdings to any Affiliates and Fiduciaries as previously described may also include a list of the other investment positions that make up the fund, such as cash investments and derivatives. Disclosure of Vanguard fund complete portfolio holdings or other investment positions by Vanguard, VMC, or a Vanguard fund to Affiliates and Fiduciaries must be authorized by a Vanguard fund officer or a Principal of Vanguard.

Currently, Vanguard discloses complete portfolio holdings to the following Affiliates and Fiduciaries as part of ongoing arrangements that serve legitimate business purposes: Vanguard and each investment advisor, custodian, and independent registered public accounting firm identified in each fund's Statement of Additional Information.

Disclosure of Portfolio Holdings to Trading Counterparties in the Normal Course of Managing a Fund's Assets

An investment advisor, administrator, or custodian for a Vanguard fund may, for legitimate business purposes within the scope of its official duties and responsibilities, disclose portfolio holdings (whether partial portfolio holdings or complete portfolio holdings) and other investment positions that make up the fund to any trading counterparty, including one or more broker-dealers or banks, during the course of, or in connection with, normal day-to-day securities and derivatives transactions with or through such trading counterparties subject to the counterparty's legal obligation not to use or disclose material nonpublic information concerning the fund's portfolio holdings, other investment positions, securities transactions, or derivatives transactions without the consent of the fund or its agents. The Vanguard funds have not given their consent to any such use or disclosure and no person or agent of Vanguard is authorized to give such consent except as approved in writing by the Boards of the Vanguard funds. Disclosure of portfolio holdings or other investment positions by Vanguard to broker-dealers must be authorized by a Vanguard fund officer or a Principal of Vanguard.

In addition to the disclosures described below to Authorized Participants, a Vanguard fund investment advisor or administrator may also disclose portfolio holdings information to other current or prospective fund shareholders in connection with the dissemination of information necessary for transactions in Creation Units (as defined below) or other large transactions with a Vanguard fund. Such shareholders are typically Authorized Participants or other financial institutions that have been authorized by VMC to purchase and redeem large blocks of shares (Creation Units), but may also include market makers and other institutional market participants and entities to whom a Vanguard fund advisor or administrator may provide information in connection with transactions in a Vanguard fund.

Disclosure of Nonmaterial Information

The Policies and Procedures permit Vanguard fund officers, Vanguard fund portfolio managers, and other Vanguard representatives (collectively, Approved Vanguard Representatives) to disclose any views, opinions, judgments, advice, or commentary, or any analytical, statistical, performance, or other information, in connection with or relating to a Vanguard fund or its portfolio holdings and/or other investment positions (collectively, commentary and analysis) or any changes in the portfolio holdings of a Vanguard fund that occurred after the end of the most recent calendar quarter (recent portfolio changes) to any person if (1) such disclosure serves a legitimate business purpose, (2) such disclosure does not effectively result in the disclosure of the complete portfolio holdings of any Vanguard fund (which can be disclosed only in accordance with the Policies and Procedures), and (3) such information does not constitute material nonpublic information. Disclosure of commentary and analysis or recent portfolio changes by Vanguard, VMC, or a Vanguard fund must be authorized by a Vanguard fund officer or a Principal of Vanguard.

An Approved Vanguard Representative must make a good faith determination whether the information constitutes material nonpublic information, which involves an assessment of the particular facts and circumstances. Vanguard believes that in most cases recent portfolio changes that involve a few or even several securities in a diversified portfolio or commentary and analysis would be immaterial and would not convey any advantage to a recipient in making an investment decision concerning a Vanguard fund. Nonexclusive examples of commentary and analysis about a Vanguard fund include (1) the allocation of the fund's portfolio holdings and other investment positions among various asset classes, sectors, industries, and countries; (2) the characteristics of the stock and bond components of the fund's portfolio holdings and other investment positions; (3) the attribution of fund returns by asset class, sector, industry, and country; and (4) the volatility characteristics of the fund. Approved Vanguard Representatives may, at their sole discretion, deny any request for information made by any person, and may do so for any reason or for no reason. Approved Vanguard Representatives include, for purposes of the Policies and Procedures, persons employed by or associated with Vanguard or a subsidiary of Vanguard who have been authorized by Vanguard's Portfolio Review Department to disclose recent portfolio changes and/or commentary and analysis in accordance with the Policies and Procedures.

Disclosure of Portfolio Holdings, Including Other Investment Positions, in Accordance with Securities and Exchange Commission (SEC) Exemptive Orders and Rule 6c-11

Vanguard's Enterprise Financial Services unit may disclose to the National Securities Clearing Corporation (NSCC), Authorized Participants, and other market makers the daily portfolio composition files (PCFs) that identify a basket of specified securities that may overlap with the actual or expected portfolio holdings of the Vanguard funds that offer a class of shares known as Vanguard ETF Shares (ETF Funds). Each Vanguard fund relying on Rule 6c-11 under the 1940 Act generally will seek to disclose complete portfolio holdings, including other investment positions, at the beginning of

each business day. These portfolio holdings, including other investment positions, will be disclosed online at *vanguard.com* in the “Portfolio” section of a fund’s Portfolio & Management page. The disclosure of PCFs and portfolio holdings, including other investment positions, will be in accordance with the terms and conditions of related exemptive orders (Vanguard ETF Exemptive Orders) issued by the SEC or Rule 6c-11 under the 1940 Act, as described in this section.

Unlike the conventional classes of shares issued by ETF Funds, the ETF Shares are listed for trading on a national securities exchange. Each ETF Fund issues and redeems ETF Shares in large blocks, known as “Creation Units.” To purchase or redeem a Creation Unit, an investor must be an “Authorized Participant” or the investor must purchase or redeem through a broker-dealer that is an Authorized Participant. An Authorized Participant is a participant in the Depository Trust Company (DTC) that has executed a “Participant Agreement” with VMC. Each ETF Fund issues Creation Units in exchange for a “portfolio deposit” consisting of a basket of specified securities (Deposit Securities) and a cash payment (Balancing Amount). Each ETF Fund also redeems Creation Units in kind; an investor who tenders a Creation Unit will receive, as redemption proceeds, a basket of specified securities together with a Balancing Amount.

In connection with the creation and redemption process, and in accordance with the terms and conditions of the Vanguard ETF Exemptive Orders, Vanguard makes available to the NSCC (a clearing agency registered with the SEC and affiliated with the DTC), for dissemination to NSCC participants on each business day prior to the opening of trading on the listing exchange, a PCF containing a list of the names and the required number of shares of each Deposit Security for each ETF Fund. In addition, the listing exchange disseminates (1) continuously throughout the trading day, through the facilities of the Consolidated Tape Association, the market value of an ETF Share; and (2) every 15 seconds throughout the trading day, a calculation of the estimated NAV of an ETF Share (expected to be accurate to within a few basis points). Comparing these two figures allows an investor to determine whether, and to what extent, ETF Shares are selling at a premium or at a discount to NAV. ETF Shares are listed on the exchange and traded on the secondary market in the same manner as other equity securities. The price of ETF Shares trading on the secondary market is based on a current bid/offer market.

In addition to making PCFs available to the NSCC, as previously described, Vanguard’s Enterprise Financial Services unit may disclose the PCF for any ETF Fund to any person, or online at *vanguard.com* to all categories of persons, if (1) such disclosure serves a legitimate business purpose and (2) such disclosure does not constitute material nonpublic information. Vanguard’s Enterprise Financial Services unit must make a good faith determination whether the PCF for any ETF Fund constitutes material nonpublic information, which involves an assessment of the particular facts and circumstances. Vanguard believes that in most cases the PCF for any ETF Fund would be immaterial and would not convey any advantage to the recipient in making an investment decision concerning the ETF Fund, if sufficient time has passed between the date of the PCF and the date on which the PCF is disclosed. Vanguard’s Enterprise Financial Services unit may, at its sole discretion, determine whether to deny any request for the PCF for any ETF Fund made by any person, and may do so for any reason or for no reason. Disclosure of a PCF must be authorized by a Vanguard fund officer or a Principal in Vanguard’s Enterprise Financial Services unit.

Disclosure of Portfolio Holdings Related Information to the Issuer of a Security for Legitimate Business Purposes

Vanguard, at its sole discretion, may disclose portfolio holdings information concerning a security held by one or more Vanguard funds to the issuer of such security if the issuer presents, to the satisfaction of Vanguard’s Enterprise Financial Services unit, convincing evidence that the issuer has a legitimate business purpose for such information. Disclosure of this information to an issuer is conditioned on the issuer being subject to a written agreement imposing a duty of confidentiality, including a duty not to trade on the basis of any material nonpublic information. The frequency with which portfolio holdings information concerning a security may be disclosed to the issuer of such security, and the length of the lag, if any, between the date of the information and the date on which the information is disclosed to the issuer, is determined based on the facts and circumstances, including, without limitation, the nature of the portfolio holdings information to be disclosed, the risk of harm to the funds and their shareholders, and the legitimate business purposes served by such disclosure. The frequency of disclosure to an issuer cannot be determined in advance of a specific request and will vary based upon the particular facts and circumstances and the legitimate business purposes, but in unusual situations could be as frequent as daily, with no lag. Disclosure of portfolio holdings information concerning a security held by one or more Vanguard funds to the issuer of such security must be authorized by a Vanguard fund officer or a Principal in Vanguard’s Portfolio Review Department or Office of the General Counsel.

Disclosure of Portfolio Holdings as Required by Applicable Law

Vanguard fund portfolio holdings (whether partial portfolio holdings or complete portfolio holdings) and other investment positions that make up a fund shall be disclosed to any person as required by applicable laws, rules, and regulations. Examples of such required disclosure include, but are not limited to, disclosure of Vanguard fund portfolio holdings (1) in a filing or submission with the SEC or another regulatory body, (2) in connection with seeking recovery on defaulted bonds in a federal bankruptcy case, (3) in connection with a lawsuit, or (4) as required by court order. Disclosure of portfolio holdings or other investment positions by Vanguard, VMC, or a Vanguard fund as required by applicable laws, rules, and regulations must be authorized by a Vanguard fund officer or a Principal of Vanguard.

Prohibitions on Disclosure of Portfolio Holdings

No person is authorized to disclose Vanguard fund portfolio holdings or other investment positions (whether online at *vanguard.com*, in writing, by fax, by email, orally, or by other means) except in accordance with the Policies and Procedures. In addition, no person is authorized to make disclosure pursuant to the Policies and Procedures if such disclosure is otherwise unlawful under the antifraud provisions of the federal securities laws (as defined in Rule 38a-1 under the 1940 Act). Furthermore, Vanguard's management, at its sole discretion, may determine not to disclose portfolio holdings or other investment positions that make up a Vanguard fund to any person who would otherwise be eligible to receive such information under the Policies and Procedures, or may determine to make such disclosures publicly as provided by the Policies and Procedures.

Prohibitions on Receipt of Compensation or Other Consideration

The Policies and Procedures prohibit a Vanguard fund, its investment advisor, and any other person or entity from paying or receiving any compensation or other consideration of any type for the purpose of obtaining disclosure of Vanguard fund portfolio holdings or other investment positions. "Consideration" includes any agreement to maintain assets in the fund or in other investment companies or accounts managed by the investment advisor or by any affiliated person of the investment advisor.

INVESTMENT ADVISORY AND OTHER SERVICES

The Funds receive all investment advisory services from Vanguard, through its Equity Index Group. These services are provided by an experienced investment advisory staff employed directly by Vanguard. The compensation and other expenses of the advisory staff are allocated among the funds utilizing these services.

During the fiscal years ended October 31, 2020, 2021, and 2022, the Funds incurred the following approximate advisory expenses:

Vanguard Fund	2020	2021	2022
Vanguard European Stock Index Fund	\$2,153,000	\$2,449,000	\$1,447,000
Vanguard Pacific Stock Index Fund	940,000	1,274,000	876,000
Vanguard Emerging Markets Stock Index Fund	3,398,000	3,659,000	2,374,000
Vanguard FTSE All-World ex-US Index Fund	2,584,000	2,861,000	2,185,000
Vanguard Total World Stock Index Fund	2,140,000	2,548,000	1,597,000
Vanguard FTSE All-World ex-US Small-Cap Index Fund	955,000	1,510,000	1,032,000
Vanguard Global ex-U.S. Real Estate Index Fund	849,000	873,000	516,000

1. Other Accounts Managed

The following table provides information relating to the other accounts managed by the portfolio managers of the Funds as of the fiscal year ended October 31, 2022 (unless otherwise noted):

Portfolio Manager		No. of accounts	Total assets	No. of accounts with performance-based fees	Total assets in accounts with performance-based fees
Christine Franquin	Registered investment companies ^{1,2,3}	6	\$548B	0	\$0
	Other pooled investment vehicles	0	\$ 0	0	\$0
	Other accounts	0	\$ 0	0	\$0
Scott E. Geiger	Registered investment companies ^{1,3,4}	5	\$ 59B	0	\$0
	Other pooled investment vehicles	0	\$ 0	0	\$0
	Other accounts	0	\$ 0	0	\$0
Jeffrey D. Miller	Registered investment companies ^{2,5,6,7}	3	\$ 99B	0	\$0
	Other pooled investment vehicles	5	\$ 15B	0	\$0
	Other accounts	0	\$ 0	0	\$0
Michael Perre	Registered investment companies ^{4,5,6,7}	8	\$565B	0	\$0
	Other pooled investment vehicles	0	\$ 0	0	\$0
	Other accounts	0	\$ 0	0	\$0

1 Includes Vanguard European Stock Index Fund which held assets of \$17.5 billion as of October 31, 2022.

2 Includes Vanguard FTSE All-World ex-US Index Fund which held assets of \$44 billion as of October 31, 2022.

3 Includes Vanguard Total World Stock Index Fund which held assets of \$31 billion as of October 31, 2022.

4 Includes Vanguard Global ex-U.S. Real Estate Index Fund which held assets of \$3.8 billion as of October 31, 2022.

5 Includes Vanguard FTSE All-World ex-US Small-Cap Index Fund which held assets of \$8.4 billion as of October 31, 2022.

6 Includes Vanguard Pacific Stock Index Fund which held assets of \$7.7 billion as of October 31, 2022.

7 Includes Vanguard Emerging Markets Stock Index Fund which held assets of \$83 billion as of October 31, 2022.

2. Material Conflicts of Interest

At Vanguard, individual portfolio managers may manage multiple accounts for multiple clients. In addition to mutual funds, these accounts may include separate accounts, collective trusts, and offshore funds. Managing multiple funds or accounts may give rise to potential conflicts of interest including, for example, conflicts among investment strategies and conflicts in the allocation of investment opportunities. Vanguard manages potential conflicts between funds or accounts through allocation policies and procedures, internal review processes, and oversight by trustees and independent third parties. Vanguard has developed trade allocation procedures and controls to ensure that no one client, regardless of type, is intentionally favored at the expense of another. Allocation policies are designed to address potential conflicts in situations in which two or more funds or accounts participate in investment decisions involving the same securities.

3. Description of Compensation

All Vanguard portfolio managers are Vanguard employees. This section describes the compensation of the Vanguard employees who manage Vanguard mutual funds. As of October 31, 2022, a Vanguard portfolio manager's compensation generally consists of base salary, bonus, and payments under Vanguard's long-term incentive compensation program. In addition, portfolio managers are eligible for the standard retirement benefits and health and welfare benefits available to all Vanguard employees. Also, certain portfolio managers may be eligible for additional retirement benefits under several supplemental retirement plans that Vanguard adopted in the 1980s to restore dollar-for-dollar the benefits of management employees that had been cut back solely as a result of tax law changes. These plans are structured to provide the same retirement benefits as the standard retirement plans.

In the case of portfolio managers responsible for managing multiple Vanguard funds or accounts, the method used to determine their compensation is the same for all funds and investment accounts. A portfolio manager's base salary is determined by the manager's experience and performance in the role, taking into account the ongoing compensation benchmark analyses performed by Vanguard's Human Resources Department. A portfolio manager's base salary is generally a fixed amount that may change as a result of an annual review, upon assumption of new duties, or when a market adjustment of the position occurs.

A portfolio manager's bonus is determined by a number of factors. One factor is gross, pre-tax performance of a fund relative to expectations for how the fund should have performed, given the fund's investment objective, policies, strategies, and limitations, and the market environment during the measurement period. This performance factor is not based on the amount of assets held in any individual fund's portfolio. For each Fund, the performance factor depends on how closely the portfolio manager tracks the Fund's benchmark index over a one-year period. Additional factors include the portfolio manager's contributions to the investment management functions within the sub-asset class, contributions to the development of other investment professionals and supporting staff, and overall contributions to strategic planning and decisions for the investment group. The target bonus is expressed as a percentage of base salary. The actual bonus paid may be more or less than the target bonus, based on how well the manager satisfies the objectives previously described. The bonus is paid on an annual basis.

Under the long-term incentive compensation program, all full-time employees receive a payment from Vanguard's long-term incentive compensation plan based on their years of service, job level, and, if applicable, management responsibilities. Each year, Vanguard's independent directors determine the amount of the long-term incentive compensation award for that year based on the investment performance of the Vanguard funds relative to competitors and Vanguard's operating efficiencies in providing services to the Vanguard funds.

4. Ownership of Securities

As of October 31, 2022, Mr. Miller owned shares of Vanguard Emerging Markets Stock Index Fund within the \$1–\$10,000 range; Mr. Geiger owned shares of Vanguard Total World Stock Index Fund within the \$50,001–\$100,000 range; and Mr. Perre owned shares of Vanguard Emerging Markets Stock Index Fund within the \$100,001–\$500,000 range. As of October 31, 2022, none of the other named portfolio managers owned any shares of the Funds they managed.

Duration and Termination of Investment Advisory Agreement

Vanguard provides investment advisory services to the Funds pursuant to the terms of the Fifth Amended and Restated Funds' Service Agreement. This agreement will continue in full force and effect until terminated or amended by mutual agreement of the Vanguard funds and Vanguard.

Securities Lending

The following table describes the securities lending activities of each Fund during the fiscal year ended October 31, 2022:

Vanguard Fund	Securities Lending Activities
Vanguard Emerging Markets Stock Index Fund	
<i>Gross income from securities lending activities</i>	\$46,849,438
Fees paid to securities lending agent from a revenue split	\$2,416,779
Fees paid for any cash collateral management service (including fees deducted from a pooled cash collateral reinvestment vehicle) that are not included in the revenue split	\$59,690
Administrative fees not included in revenue split	\$209,187
Indemnification fee not included in revenue split	\$0
Rebate (paid to borrower)	\$3,007,003
Other fees not included in revenue split (specify)	\$0
Aggregate fees/compensation for securities lending activities	\$5,692,659
<i>Net income from securities lending activities</i>	\$41,156,779
Vanguard European Stock Index Fund	
<i>Gross income from securities lending activities</i>	\$4,309,547
Fees paid to securities lending agent from a revenue split	\$318,501
Fees paid for any cash collateral management service (including fees deducted from a pooled cash collateral reinvestment vehicle) that are not included in the revenue split	\$4,253
Administrative fees not included in revenue split	\$35
Indemnification fee not included in revenue split	\$0
Rebate (paid to borrower)	\$112,466
Other fees not included in revenue split (specify)	\$0

Vanguard Fund	Securities Lending Activities
Aggregate fees/compensation for securities lending activities	\$435,255
<i>Net income from securities lending activities</i>	\$3,874,292
<hr/>	
Vanguard FTSE All-World ex-U.S. Index Fund	
<i>Gross income from securities lending activities</i>	\$12,169,148
Fees paid to securities lending agent from a revenue split	\$642,405
Fees paid for any cash collateral management service (including fees deducted from a pooled cash collateral reinvestment vehicle) that are not included in the revenue split	\$20,000
Administrative fees not included in revenue split	\$36,497
Indemnification fee not included in revenue split	\$0
Rebate (paid to borrower)	\$1,540,816
Other fees not included in revenue split (specify)	\$0
Aggregate fees/compensation for securities lending activities	\$2,239,718
<i>Net income from securities lending activities</i>	\$9,929,430
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Vanguard FTSE All-World ex-U.S. Small-Cap Index Fund	
<i>Gross income from securities lending activities</i>	\$13,962,038
Fees paid to securities lending agent from a revenue split	\$920,072
Fees paid for any cash collateral management service (including fees deducted from a pooled cash collateral reinvestment vehicle) that are not included in the revenue split	\$19,429
Administrative fees not included in revenue split	\$3,030
Indemnification fee not included in revenue split	\$0
Rebate (paid to borrower)	\$1,036,277
Other fees not included in revenue split (specify)	\$0
Aggregate fees/compensation for securities lending activities	\$1,978,808
<i>Net income from securities lending activities</i>	\$11,983,230
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Vanguard Global ex-U.S. Real Estate index Fund	
<i>Gross income from securities lending activities</i>	\$4,269,506
Fees paid to securities lending agent from a revenue split	\$278,439
Fees paid for any cash collateral management service (including fees deducted from a pooled cash collateral reinvestment vehicle) that are not included in the revenue split	\$5,490
Administrative fees not included in revenue split	\$265
Indemnification fee not included in revenue split	\$0
Rebate (paid to borrower)	\$324,762
Other fees not included in revenue split (specify)	\$0
Aggregate fees/compensation for securities lending activities	\$608,956
<i>Net income from securities lending activities</i>	\$3,660,550
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Vanguard Pacific Stock Index Fund	
<i>Gross income from securities lending activities</i>	\$3,021,672
Fees paid to securities lending agent from a revenue split	\$189,740
Fees paid for any cash collateral management service (including fees deducted from a pooled cash collateral reinvestment vehicle) that are not included in the revenue split	\$5,701
Administrative fees not included in revenue split	\$0
Indemnification fee not included in revenue split	\$0
Rebate (paid to borrower)	\$368,931
Other fees not included in revenue split (specify)	\$0
Aggregate fees/compensation for securities lending activities	\$564,372
<i>Net income from securities lending activities</i>	\$2,457,300
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Vanguard Total World Stock Index Fund	
<i>Gross income from securities lending activities</i>	\$7,228,804
Fees paid to securities lending agent from a revenue split	\$332,073
Fees paid for any cash collateral management service (including fees deducted from a pooled cash collateral reinvestment vehicle) that are not included in the revenue split	\$9,332
Administrative fees not included in revenue split	\$36,721

Vanguard Fund	Securities Lending Activities
Indemnification fee not included in revenue split	\$0
Rebate (paid to borrower)	\$612,857
Other fees not included in revenue split (specify)	\$0
Aggregate fees/compensation for securities lending activities	\$990,983
<i>Net income from securities lending activities</i>	\$6,237,821

The services provided by Brown Brothers Harriman & Co. and Vanguard, each acting separately as securities lending agents for certain Vanguard funds, include coordinating the selection of securities to be loaned to approved borrowers; negotiating the terms of the loan; monitoring the value of the securities loaned and corresponding collateral, marking to market daily; coordinating the investment of cash collateral in the funds' approved cash collateral reinvestment vehicle; monitoring dividends and coordinating material proxy votes relating to loaned securities; and transferring, recalling, and arranging the return of loaned securities to the funds upon termination of the loan.

PORTFOLIO TRANSACTIONS

The advisor decides which securities to buy and sell on behalf of a Fund and then selects the brokers or dealers that will execute the trades on an agency basis or the dealers with whom the trades will be effected on a principal basis. For each trade, the advisor must select a broker-dealer that it believes will provide "best execution." Best execution does not necessarily mean paying the lowest spread or commission rate available. In seeking best execution, the SEC has said that an advisor should consider the full range of a broker-dealer's services. The factors considered by the advisor in seeking best execution include, but are not limited to, the broker-dealer's execution capability, clearance and settlement services, commission rate, trading expertise, willingness and ability to commit capital, ability to provide anonymity, financial responsibility, reputation and integrity, responsiveness, access to underwritten offerings and secondary markets, and access to company management, as well as the value of any research provided by the broker-dealer. In assessing which broker-dealer can provide best execution for a particular trade, the advisor also may consider the timing and size of the order and available liquidity and current market conditions. Subject to applicable legal requirements, the advisor may select a broker based partly on brokerage or research services provided to the advisor and its clients, including the Funds. The advisor may cause a Fund to pay a higher commission than other brokers would charge if the advisor determines in good faith that the amount of the commission is reasonable in relation to the value of services provided. The advisor also may receive brokerage or research services from broker-dealers that are provided at no charge in recognition of the volume of trades directed to the broker. To the extent research services or products may be a factor in selecting brokers, services and products may include written research reports analyzing performance or securities, discussions with research analysts, meetings with corporate executives to obtain oral reports on company performance, market data, and other products and services that will assist the advisor in its investment decision-making process. The research services provided by brokers through which a Fund effects securities transactions may be used by the advisor in servicing all of its accounts, and some of the services may not be used by the advisor in connection with the Fund.

During the fiscal years ended October 31, 2020, 2021, and 2022, the Funds paid the following approximate amounts in brokerage commissions. Brokerage commissions paid by a fund may be substantially different from year to year for multiple reasons, such as cash flows or changes to the stocks that make up a fund's target index.

Vanguard Fund	2020	2021	2022
Vanguard Emerging Markets Stock Index Fund	\$7,848,000	\$10,384,000	\$9,094,000
Vanguard European Stock Index Fund ¹	269,000	371,000	413,000
Vanguard FTSE All-World ex-U.S. Index Fund	1,512,000	1,916,000	1,899,000
Vanguard FTSE All-World ex-U.S. Small-Cap Index Fund ¹	703,000	1,044,000	935,000
Vanguard Global ex-U.S. Real Estate Index Fund ²	437,000	272,000	324,000
Vanguard Pacific Stock Index Fund ¹	138,000	218,000	236,000
Vanguard Total World Stock Index Fund ¹	618,000	926,000	941,000

¹ The increase in brokerage commissions paid during the fiscal year ended October 31, 2021, was due to an increase in cash flow to the Fund.

² The decrease in brokerage commissions paid during the fiscal year ended October 31, 2021, was due to a decrease in cash flow to the Fund.

Some securities that are considered for investment by a Fund may also be appropriate for other Vanguard funds or for other clients served by the advisors. If such securities are compatible with the investment policies of a Fund and one or more of the advisor's other clients, and are considered for purchase or sale at or about the same time, then

transactions in such securities may be aggregated by the advisor, and the purchased securities or sale proceeds may be allocated among the participating Vanguard funds and the other participating clients of the advisor in a manner deemed equitable by the advisor. Although there may be no specified formula for allocating such transactions, the allocation methods used, and the results of such allocations, will be subject to periodic review by the Funds' board of trustees.

As of October 31, 2022, each Fund held securities of its "regular brokers or dealers," as that term is defined in Rule 10b-1 of the 1940 Act, as follows:

Vanguard Fund	Regular Broker or Dealer (or Parent)	Aggregate Holdings
Vanguard Emerging Markets Stock Index Fund	ICICI Securities Limited	\$ 5,756,000
Vanguard European Stock Index Fund	Barclays Capital, Inc.	51,594,000
	BNP Paribas Securities Corp.	94,294,000
	Credit Suisse Securities (USA) LLC	20,407,000
	UBS Securities LLC	91,057,000
Vanguard FTSE All-World ex-U.S. Index Fund	Barclays Capital, Inc.	55,912,000
	Credit Agricole	22,343,000
	Credit Suisse Securities (USA) LLC	21,906,000
	TD Securities	236,976,000
Vanguard FTSE All-World ex-U.S. Small-Cap Index Fund	—	—
Vanguard Global ex-U.S. Real Estate Index Fund	—	—
Vanguard Pacific Stock Index Fund	—	—
Vanguard Total World Stock Index Fund	Barclays Capital, Inc.	13,926,000
	Citigroup Global Markets Inc.	44,649,000
	Credit Suisse Securities (USA) LLC	5,439,000
	Goldman Sachs & Co. LLC	57,621,000
	J.P. Morgan Securities LLC	185,426,000
	Morgan Stanley & Co. LLC	51,730,000
	UBS Securities LLC	24,553,000
	Virtu Americas LLC	1,068,000

PROXY VOTING

I. Proxy Voting Policies

Each Vanguard fund advised by Vanguard retains the authority to vote proxies received with respect to the shares of equity securities held in a portfolio advised by Vanguard. The Board of Trustees of the Vanguard-advised funds (the Board) has adopted proxy voting procedures and guidelines to govern proxy voting for each portfolio retaining proxy voting authority, which are summarized in Appendix A.

Vanguard has entered into agreements with various state, federal, and non-U.S. regulators and with certain issuers that limit the amount of shares that the funds may vote at their discretion for particular securities. For these securities, the funds are able to vote a limited portion of the shares at their discretion. Any additional shares generally are voted in the same proportion as votes cast by the issuer's entire shareholder base (i.e., mirror voted), or the fund is not permitted to vote such shares. Further, the Board has adopted policies that will result in certain funds mirror voting a higher proportion of the shares they own in a regulated issuer in order to permit certain other funds (generally advised by managers not affiliated with Vanguard) to mirror vote none, or a lower proportion, of their shares in such regulated issuer.

II. Securities Lending

There may be occasions when Vanguard needs to restrict lending of and/or recall securities that are out on loan in order to vote the full position at a shareholder meeting. For the funds managed by Vanguard, Vanguard has processes to monitor securities on loan and to evaluate any circumstances that may require it to restrict and/or attempt to recall the security based on the criteria set forth in Appendix A.

To obtain a free copy of a report that details how the funds voted the proxies relating to the portfolio securities held by the funds for the prior 12-month period ended June 30, log on to vanguard.com or visit the SEC's website at sec.gov.

INFORMATION ABOUT THE ETF SHARE CLASS

Each Fund (collectively, the ETF Funds) offers and issues an exchange-traded class of shares called ETF Shares. Each Fund issues and redeems ETF Shares in large blocks, known as “Creation Units.”

To purchase or redeem a Creation Unit, you must be an Authorized Participant or you must transact through a broker that is an Authorized Participant. An Authorized Participant is a participant in the Depository Trust Company (DTC) that has executed a Participant Agreement with Vanguard Marketing Corporation, the ETF Funds’ Distributor (the Distributor). For a current list of Authorized Participants, contact the Distributor.

Investors that are not Authorized Participants must hold ETF Shares in a brokerage account. As with any stock traded on an exchange through a broker, purchases and sales of ETF Shares will be subject to usual and customary brokerage commissions.

Each ETF Fund issues Creation Units in kind in exchange for a basket of securities that are part of—or soon to be part of—its target index (Deposit Securities). Each ETF Fund also redeems Creation Units in kind; an investor who tenders a Creation Unit will receive, as redemption proceeds, a basket of securities that are part of the Fund’s portfolio holdings (Redemption Securities). The Deposit Securities and Redemption Securities may include American Depositary Receipts (ADRs). As part of any creation or redemption transaction, the investor will either pay or receive some cash in addition to the securities, as described more fully on the following pages. Each ETF Fund reserves the right to issue Creation Units for cash, rather than in kind. As of the date of this Statement of Additional Information, cash purchases and redemptions will be required for securities traded in Brazil, Chile, China, Colombia, Egypt, India, Kuwait, Malaysia, Pakistan, Peru, Qatar, Russia, Saudi Arabia, South Korea, Taiwan, and UAE.

Exchange Listing and Trading

The ETF Shares have been approved for listing on a national securities exchange and will trade on the exchange at market prices that may differ from net asset value (NAV). There can be no assurance that, in the future, ETF Shares will continue to meet all of the exchange’s listing requirements. The exchange will institute procedures to delist a Fund’s ETF Shares if the Fund’s ETF Shares do not continuously comply with the exchange’s listing rules. The exchange will also delist a Fund’s ETF Shares upon termination of the ETF share class.

The exchange disseminates, through the facilities of the Consolidated Tape Association, an updated “indicative optimized portfolio value” (IOPV) for each ETF Fund as calculated by an information provider. The ETF Funds are not involved with or responsible for the calculation or dissemination of the IOPVs, and they make no warranty as to the accuracy of the IOPVs. An IOPV for a Fund’s ETF Shares is disseminated every 15 seconds during regular exchange trading hours. An IOPV has a securities value component and a cash component. The IOPV is designed as an estimate of an ETF Fund’s NAV at a particular point in time, but it is only an estimate and should not be viewed as the actual NAV, which is calculated once each day.

Conversions and Exchanges

Owners of conventional (i.e., not exchange-traded) shares issued by an ETF Fund may convert those shares to ETF Shares of equivalent value of the same Fund. Please note that investors who own conventional shares through a 401(k) plan or other employer-sponsored retirement or benefit plan generally may not convert those shares to ETF Shares and should check with their plan sponsor or recordkeeper. ETF Shares, whether acquired through a conversion or purchased on the secondary market, cannot be converted to conventional shares by a shareholder. Also, ETF Shares of one fund cannot be exchanged for ETF Shares of another fund.

Investors that are not Authorized Participants must hold ETF Shares in a brokerage account. Thus, before converting conventional shares to ETF Shares, an investor must have an existing, or open a new, brokerage account. This account may be with Vanguard Brokerage Services or with any other brokerage firm. To initiate a conversion of conventional shares to ETF Shares, an investor must contact his or her broker.

Vanguard Brokerage Services does not impose a fee on conversions from Vanguard conventional shares to Vanguard ETF Shares. However, other brokerage firms may charge a fee to process a conversion. Vanguard reserves the right, in the future, to impose a transaction fee on conversions or to limit or terminate the conversion privilege.

Converting conventional shares to ETF Shares is generally accomplished as follows. First, after the broker notifies Vanguard of an investor’s request to convert, Vanguard will transfer conventional shares from the investor’s account with Vanguard to the broker’s omnibus account with Vanguard (an account maintained by the broker on behalf of all its

customers who hold conventional Vanguard fund shares through the broker). After the transfer, Vanguard's records will reflect the broker, not the investor, as the owner of the shares. Next, the broker will instruct Vanguard to convert the appropriate number or dollar amount of conventional shares in its omnibus account to ETF Shares of equivalent value, based on the respective NAVs of the two share classes. The ETF Fund's transfer agent will reflect ownership of all ETF Shares in the name of the DTC. The DTC will keep track of which ETF Shares belong to the broker, and the broker, in turn, will keep track of which ETF Shares belong to its customers.

Because the DTC is unable to handle fractional shares, only whole shares can be converted. For example, if the investor owned 300.25 conventional shares, and this was equivalent in value to 90.75 ETF Shares, the DTC account would receive 90 ETF Shares. Conventional shares with a value equal to 0.75 ETF Shares (in this example, that would be 2.481 conventional shares) would remain in the broker's omnibus account with Vanguard. The broker then could either (1) take certain internal actions necessary to credit the investor's account with 0.75 ETF Shares or (2) redeem the 2.481 conventional shares for cash at NAV and deliver that cash to the investor's account. If the broker chose to redeem the conventional shares, the investor would realize a gain or loss on the redemption that must be reported on his or her tax return (unless the shares are held in an IRA or other tax-deferred account). An investor should consult his or her broker for information on how the broker will handle the conversion process, including whether the broker will impose a fee to process a conversion.

The conversion process works differently for investors who opt to hold ETF Shares through an account at Vanguard Brokerage Services. Investors who convert their conventional shares to ETF Shares through Vanguard Brokerage Services will have *all* conventional shares for which they request conversion converted to the equivalent dollar value of ETF Shares. Because no fractional shares will have to be sold, the transaction will not be taxable.

Here are some important points to keep in mind when converting conventional shares of an ETF Fund to ETF Shares:

- The conversion process can take anywhere from several days to several weeks, depending on the broker. Vanguard generally will process conversion requests either on the day they are received or on the next business day. Vanguard imposes conversion blackout windows around the dates when an ETF Fund declares dividends. This is necessary to prevent a shareholder from collecting a dividend from both the conventional share class currently held and also from the ETF share class to which the shares will be converted.
- During the conversion process, an investor will remain fully invested in the Fund's conventional shares, and the investment will increase or decrease in value in tandem with the NAV of those shares.
- The conversion transaction is nontaxable except, if applicable, to the very limited extent previously described.
- During the conversion process, an investor will be able to liquidate all or part of an investment by instructing Vanguard or the broker (depending on whether the shares are held in the investor's account or the broker's omnibus account) to redeem the conventional shares. After the conversion process is complete, an investor will be able to liquidate all or part of an investment by instructing the broker to sell the ETF Shares.

Book Entry Only System

ETF Shares issued by the Funds are registered in the name of the DTC or its nominee, Cede & Co., and are deposited with, or on behalf of, the DTC. The DTC is a limited-purpose trust company that was created to hold securities of its participants (DTC Participants) and to facilitate the clearance and settlement of transactions among them through electronic book-entry changes in their accounts, thereby eliminating the need for physical movement of securities certificates. DTC Participants include securities brokers and dealers, banks, trust companies, clearing corporations, and certain other organizations. The DTC is a subsidiary of the Depository Trust and Clearing Corporation (DTCC), which is owned by certain participants of the DTCC's subsidiaries, including the DTC. Access to the DTC system is also available to others such as banks, brokers, dealers, and trust companies that clear through or maintain a custodial relationship with a DTC Participant, either directly or indirectly (Indirect Participants).

Beneficial ownership of ETF Shares is limited to DTC Participants, Indirect Participants, and persons holding interests through DTC Participants and Indirect Participants. Ownership of beneficial interests in ETF Shares (owners of such beneficial interests are referred to herein as Beneficial Owners) is shown on, and the transfer of ownership is effected only through, records maintained by the DTC (with respect to DTC Participants) and on the records of DTC Participants (with respect to Indirect Participants and Beneficial Owners that are not DTC Participants). Beneficial Owners will receive from, or through, the DTC Participant a written confirmation relating to their purchase of ETF Shares. The laws of some jurisdictions may require that certain purchasers of securities take physical delivery of such securities. Such laws may impair the ability of certain investors to acquire beneficial interests in ETF Shares.

Each ETF Fund recognizes the DTC or its nominee as the record owner of all ETF Shares for all purposes. Beneficial Owners of ETF Shares are not entitled to have ETF Shares registered in their names and will not receive or be entitled to physical delivery of share certificates. Each Beneficial Owner must rely on the procedures of the DTC and any DTC Participant and/or Indirect Participant through which such Beneficial Owner holds its interests to exercise any rights of a holder of ETF Shares.

Conveyance of all notices, statements, and other communications to Beneficial Owners is effected as follows. The DTC will make available to each ETF Fund, upon request and for a fee, a listing of the ETF Shares of the Fund held by each DTC Participant. The ETF Fund shall obtain from each DTC Participant the number of Beneficial Owners holding ETF Shares, directly or indirectly, through the DTC Participant. The ETF Fund shall provide each DTC Participant with copies of such notice, statement, or other communication, in form, in number, and at such place as the DTC Participant may reasonably request, in order that these communications may be transmitted by the DTC Participant, directly or indirectly, to the Beneficial Owners. In addition, the ETF Fund shall pay to each DTC Participant a fair and reasonable amount as reimbursement for the expenses attendant to such transmittal, subject to applicable statutory and regulatory requirements.

Share distributions shall be made to the DTC or its nominee as the registered holder of all ETF Shares. The DTC or its nominee, upon receipt of any such distributions, shall immediately credit the DTC Participants' accounts with payments in amounts proportionate to their respective beneficial interests in ETF Shares of the appropriate ETF Fund as shown on the records of the DTC or its nominee. Payments by DTC Participants to Indirect Participants and Beneficial Owners of ETF Shares held through such DTC Participants will be governed by standing instructions and customary practices, as is now the case with securities held for the accounts of customers in bearer form or registered in a "street name," and will be the responsibility of such DTC Participants.

The ETF Funds have no responsibility or liability for any aspects of the records relating to or notices to Beneficial Owners; for payments made on account of beneficial ownership interests in such ETF Shares; for maintenance, supervision, or review of any records relating to such beneficial ownership interests; or for any other aspect of the relationship between the DTC and DTC Participants or the relationship between such DTC Participants and the Indirect Participants and Beneficial Owners owning through such DTC Participants.

The DTC may determine to discontinue providing its service with respect to ETF Shares at any time by giving reasonable notice to the ETF Funds and discharging its responsibilities with respect thereto under applicable law. Under such circumstances, the ETF Funds shall take action either to find a replacement for the DTC to perform its functions at a comparable cost or, if such replacement is unavailable, to issue and deliver printed certificates representing ownership of ETF Shares, unless the ETF Funds make other arrangements with respect thereto satisfactory to the exchange.

Purchase and Issuance of ETF Shares in Creation Units

Except for conversions to ETF Shares from conventional shares, the ETF Funds issue and sell ETF Shares only in Creation Units on a continuous basis through the Distributor, without a sales load, at their NAV next determined after receipt of an order in proper form on any business day. The ETF Funds do not issue fractional Creation Units. (Please see "*Conversions and Exchanges*" for the issuance of ETF Shares resulting from a conversion.)

A business day is any day on which the NYSE is open for business. As of the date of this Statement of Additional Information, the NYSE observes the following U.S. holidays: New Year's Day; Martin Luther King, Jr., Day; Presidents' Day (Washington's Birthday); Good Friday; Memorial Day; Juneteenth National Independence Day; Independence Day; Labor Day; Thanksgiving Day; and Christmas Day.

Fund Deposit. The consideration for purchase of a Creation Unit from the ETF Fund generally consists of an in-kind deposit of a designated portfolio of securities (Deposit Securities) and an amount of cash (Cash Component) consisting of a purchase balancing amount and a transaction fee (both described in the following paragraphs). Together, the Deposit Securities and the Cash Component constitute the fund deposit.

The purchase balancing amount is an amount equal to the difference between the NAV of a Creation Unit and the market value of the Deposit Securities (Deposit Amount). It ensures that the NAV of a fund deposit (not including the transaction fee) is identical to the NAV of the Creation Unit it is used to purchase. If the purchase balancing amount is a

positive number (i.e., the NAV per Creation Unit exceeds the market value of the Deposit Securities), then that amount will be paid by the purchaser to the ETF Fund in cash. If the purchase balancing amount is a negative number (i.e., the NAV per Creation Unit is less than the market value of the Deposit Securities), then that amount will be paid by an ETF Fund to the purchaser in cash (except as offset by the transaction fee).

Vanguard, through the National Securities Clearing Corporation (NSCC), makes available after the close of each business day a list of the names and the number of shares of each Deposit Security to be included in the next business day's fund deposit for each ETF Fund (subject to possible amendment or correction). In the case of Vanguard Emerging Markets Stock Index Fund, which requires that creation orders transmitted via certain modes of communication be placed during specified hours on the day before the trade date (T-1), Vanguard makes available prior to Closing Time (defined below) on T-1, through its proprietary portal system, a list of the names and the number of shares of each Deposit Security to be included in the fund deposit for use on the trade date (subject to possible amendment or correction). Each ETF Fund reserves the right to accept a nonconforming fund deposit.

The identity and number of shares of the Deposit Securities required for a fund deposit may change from one day to another to reflect rebalancing adjustments and corporate actions or to respond to adjustments to the weighting or composition of the component securities of the relevant target index.

In addition, each ETF Fund reserves the right to permit or require the substitution of an amount of cash—referred to as “cash in lieu”—to be added to the Cash Component to replace any Deposit Security. This might occur, for example, if a Deposit Security is not available in sufficient quantity for delivery, is not eligible for transfer through the applicable clearance and settlement system, or is not eligible for trading by an Authorized Participant or the investor for which an Authorized Participant is acting. Trading costs incurred by the ETF Fund in connection with the purchase of Deposit Securities with cash-in-lieu amounts will be an expense of the ETF Fund. However, Vanguard may adjust the transaction fee to protect existing shareholders from this expense.

All questions as to the number of shares of each security in the Deposit Securities and the validity, form, eligibility, and acceptance for deposit of any securities to be delivered shall be determined by the ETF Fund, and the ETF Fund's determination shall be final and binding.

Procedures for Purchasing Creation Units. An order to purchase a Creation Unit of each ETF Fund other than Vanguard Emerging Markets Stock Index Fund, and an order to purchase a Creation Unit of Vanguard Emerging Markets Stock Index Fund transmitted via U.S. mail or overnight delivery service, must be submitted in proper form to the Distributor; such order must be received by the Distributor prior to the closing time of regular trading on the NYSE (Closing Time) (ordinarily 4 p.m., Eastern time) to receive that business day's NAV. An order to purchase a Creation Unit of Vanguard Emerging Markets Stock Index Fund transmitted via portal, fax, email, or telephone must be submitted in proper form to the Distributor; such order must be received by the Distributor within a ninety-minute window after Closing Time on the preceding business day (ordinarily between 4 p.m. and 5 p.m., Eastern time) to receive the NAV on a particular business day. Each ETF Fund reserves the absolute right to reject a purchase order (see discussion below under the heading “*Rejection of Purchase Orders*”). The date on which an order to purchase (or redeem) Creation Units is placed is referred to as the transmittal date. Authorized Participants must transmit purchase orders using a transmission method acceptable to the Distributor pursuant to procedures set forth in the Participant Agreement.

The Distributor shall inform the ETF Fund's custodian of the order. The custodian will then inform the appropriate foreign subcustodians. Each subcustodian shall maintain an account into which the Authorized Participant shall deliver, on behalf of itself or the party on whose behalf it is acting, the relevant Deposit Securities (or the cash value of all or part of such securities, in the case of a permitted or required cash purchase or cash-in-lieu amount), with any appropriate adjustments as advised by Vanguard. Deposit Securities must be delivered to an account maintained at the applicable local subcustodians.

The Authorized Participant must also make available on or before the contractual settlement date, by means satisfactory to the ETF Fund, immediately available or same-day funds estimated by the ETF Fund to be sufficient to pay the Cash Component. Any excess funds will be returned following settlement of the issue of the Creation Unit.

Neither the Trust, the ETF Funds, the Distributor, nor any affiliated party will be liable to an investor who is unable to submit a purchase order by Closing Time, or an earlier cut-off time in the case of an ETF Fund that has established such a time, even if the problem is the responsibility of one of those parties (e.g., the Distributor's phone or email systems were not operating properly).

If you are not an Authorized Participant, you must place your purchase order in an acceptable form with an Authorized Participant. The Authorized Participant may request that you make certain representations or enter into agreements with respect to the order (e.g., to provide for payments of cash when required).

An order to purchase Creation Units is deemed received on the transmittal date if (1) such order is received by the Distributor prior to Closing Time on such transmittal date, or an earlier cut-off time in the case of an ETF Fund that has established such a time and (2) all other procedures set forth in the Participant Agreement are properly followed.

Except as provided herein, a Creation Unit will not be issued until the transfer of good title to an ETF Fund of the Deposit Securities and the payment of the Cash Component have been completed. When each subcustodian has confirmed to the custodian that the required securities included in the fund deposit have been delivered to the account of the relevant subcustodian, and the Cash Component has been delivered to the custodian, the Distributor shall be notified of such delivery, and the ETF Fund will issue and cause the delivery of the Creation Unit.

If a fund deposit is incomplete on the second business day after the trade date (the trade date, known as "T," is the date on which the trade actually takes place; two business days after the trade date is known as "T+2") because of the failed delivery of one or more of the Deposit Securities, an ETF Fund shall be entitled to cancel the purchase order. Alternatively, an ETF Fund may issue Creation Units in reliance on the Authorized Participant's undertaking to deliver the missing Deposit Securities at a later date. Such undertaking shall be secured by the delivery and maintenance of cash collateral in an amount determined by the ETF Fund in accordance with the terms of the Participant Agreement.

Rejection of Purchase Orders. Each ETF Fund reserves the absolute right to reject a purchase order. By way of example, and not limitation, an ETF Fund will reject a purchase order if:

- The order is not in proper form.
- The Deposit Securities delivered are not the same (in name or amount) as the published basket.
- Acceptance of the Deposit Securities would have certain adverse tax consequences to the ETF Fund.
- Acceptance of the fund deposit would, in the opinion of counsel, be unlawful.
- Acceptance of the fund deposit would otherwise, at the discretion of the ETF Fund or Vanguard, have an adverse effect on the Fund or any of its shareholders.
- Circumstances outside the control of the ETF Fund, the Trust, the transfer agent, the custodian, the subcustodian(s), the Distributor, and Vanguard make it for all practical purposes impossible to process the order. Examples include, but are not limited to, natural disasters, public service disruptions, or utility problems such as fires, floods, extreme weather conditions, and power outages resulting in telephone, telecopy, and computer failures; market conditions or activities causing trading halts; systems failures involving computer or other information systems affecting the aforementioned parties as well as the DTC, the NSCC, or any other participant in the purchase process; and similar extraordinary events.

If a purchase order is rejected, the Distributor shall notify the Authorized Participant that submitted the order. The ETF Funds, the Trust, the transfer agent, the custodian, the subcustodian(s), the Distributor, and Vanguard are under no duty, however, to give notification of any defects or irregularities in the delivery of a fund deposit, nor shall any of them incur any liability for the failure to give any such notification.

Transaction Fee on Purchases of Creation Units. Each ETF Fund may impose a transaction fee (payable to the Fund) to compensate the ETF Fund for costs associated with the issuance of Creation Units. The amount of the fee, which may be changed by each ETF Fund from time to time at its sole discretion, is made available daily to Authorized Participants, market makers, and other interested parties through Vanguard's proprietary portal system. When an ETF Fund permits (or requires) a purchaser to substitute cash in lieu of depositing one or more Deposit Securities, the purchaser may be assessed an additional variable charge on the cash-in-lieu portion of the investment. The amount of this charge will be disclosed to investors before they place their orders. The amount will be determined by the ETF Fund at its sole discretion. The maximum transaction fee, including any variable charges, on purchases of Creation Units, including any additional charges as described, shall be 2% of the value of the Creation Units.

Each ETF Fund reserves the right to not impose a transaction fee or to vary the amount of the transaction fee imposed, up to the maximum amount listed above. To the extent a creation transaction fee is not charged or does not cover the costs associated with the issuance of the Creation Units, certain costs may be borne by the ETF Fund.

Redemption of ETF Shares in Creation Units

To be eligible to place a redemption order, you must be an Authorized Participant. Investors that are not Authorized Participants must make appropriate arrangements with an Authorized Participant in order to redeem a Creation Unit.

ETF Shares may be redeemed only in Creation Units. Investors should expect to incur brokerage and other transaction costs in connection with assembling a sufficient number of ETF Shares to constitute a redeemable Creation Unit. There can be no assurance, however, that there will be sufficient liquidity in the public trading market at any time to permit assembly of a Creation Unit. Redemption requests received on a business day in good order will receive the NAV next determined after the request is made.

Unless cash redemptions are available or specified for the ETF Fund, an investor tendering a Creation Unit generally will receive redemption proceeds consisting of (1) a basket of Redemption Securities; plus (2) a redemption balancing amount in cash equal to the difference between (x) the NAV of the Creation Unit being redeemed, as next determined after receipt of a request in proper form, and (y) the value of the Redemption Securities; less (3) a transaction fee. If the Redemption Securities have a value greater than the NAV of a Creation Unit, the redeeming investor will pay the redemption balancing amount in cash to the ETF Fund, rather than receive such amount from the Fund.

Vanguard, through the NSCC, makes available after the close of each business day a list of the names and the number of shares of each Redemption Security to be included in the next business day's redemption basket for each ETF Fund (subject to possible amendment or correction). In the case of Vanguard Emerging Markets Stock Index Fund, which requires that redemption orders transmitted via certain modes of communication be placed during specified hours on T-1, Vanguard makes available prior to Closing Time on T-1, through its proprietary portal system, a list of the names and the number of shares of each Redemption Security to be included in the redemption basket for use on the trade date (subject to possible amendment or correction). The basket of Redemption Securities provided to an investor redeeming a Creation Unit may not be identical to the basket of Deposit Securities required of an investor purchasing a Creation Unit. An ETF Fund may provide a redeeming investor with a basket of Redemption Securities that differs from the composition of the redemption basket published through the NSCC.

Each ETF Fund reserves the right to deliver cash in lieu of any Redemption Security for the same reason it might accept cash in lieu of a Deposit Security, as previously discussed, or if the ETF Fund could not lawfully deliver the security or could not do so without first registering such security under federal or state law.

Neither the Trust, the ETF Funds, the Distributor, nor any affiliated party will be liable to an investor who is unable to submit a redemption order by Closing Time, or an earlier cut-off time in the case of an ETF Fund that has established such a time, even if the problem is the responsibility of one of those parties (e.g., the Distributor's phone or email systems were not operating properly).

Transaction Fee on Redemptions of Creation Units. Each ETF Fund may impose a transaction fee (payable to the Fund) to compensate the ETF Fund for costs associated with the redemption of Creation Units. The amount of the fee, which may be changed by each ETF Fund from time to time at its sole discretion, is made available daily to Authorized Participants, market makers, and other interested parties through Vanguard's proprietary portal system. When an ETF Fund permits (or requires) a redeeming investor to receive cash in lieu of one or more Redemption Securities, Each ETF fund may assess an additional variable charge on the cash portion of redemption. The amount will vary as determined by the ETF Fund at its sole discretion and is made available daily to Authorized Participants, market makers, and other interested parties through Vanguard's proprietary portal system. The amount will vary as determined by the ETF Fund at its sole discretion. The maximum transaction fee, including any variable charges, on redemptions of Creation Units, shall be 2% of the value of the Creation Units.

Each ETF Fund reserves the right to not impose a transaction fee or to vary the amount of the transaction fee imposed, up to the maximum amount listed above. To the extent a redemption transaction fee is not charged or does not cover the costs associated with the redemption of the Creation Units, certain costs may be borne by the ETF Fund.

Placement of Redemption Orders. An order to redeem a Creation Unit of each ETF Fund other than Vanguard Emerging Markets Stock Index Fund and an order to redeem a Creation Unit of Vanguard Emerging Markets Stock Index Fund transmitted via U.S. mail or overnight delivery service must be submitted in proper form to the Distributor; such order must be received by the Distributor prior to Closing Time to receive that business day's NAV. An order to redeem a Creation Unit of Vanguard Emerging Markets Stock Index Fund transmitted via portal, fax, email, or telephone

must be submitted in proper form to the Distributor; such order must be received by the Distributor within a ninety-minute window after Closing Time on the preceding business day (ordinarily between 4 p.m. and 5:30 p.m., Eastern time) to receive the NAV on a particular business day. Authorized Participants must transmit redemption orders using a transmission method acceptable to the Distributor pursuant to procedures set forth in the Participant Agreement.

An order to redeem a Creation Unit is deemed received on the transmittal date if (1) such order is received by the Distributor before Closing Time on such transmittal date or an earlier cut-off time in the case of an ETF Fund that has established such a time and (2) all other procedures set forth in the Participant Agreement are properly followed.

If on T+2 an Authorized Participant has failed to deliver all of the Vanguard ETF Shares it is seeking to redeem, an ETF Fund shall be entitled to cancel the redemption order. Alternatively, the ETF Fund may deliver to the Authorized Participant the full complement of Redemption Securities and cash in reliance on the Authorized Participant's undertaking to deliver the missing ETF Shares at a later date. Such undertaking shall be secured by the Authorized Participant's delivery and maintenance of cash collateral in accordance with collateral procedures that are part of the Participant Agreement. In all cases the ETF Fund shall be entitled to charge the Authorized Participant for any costs (including investment losses, attorney's fees, and interest) incurred by the ETF Fund as a result of the late delivery or failure to deliver.

Each ETF Fund reserves the right, at its sole discretion, to require or permit a redeeming investor to receive the redemption proceeds in cash. In such cases, the investor would receive a cash payment equal to the NAV of its ETF Shares based on the NAV of those shares next determined after the redemption request is received in proper form (minus a transaction fee, including a charge for cash redemptions, as previously discussed).

If an Authorized Participant, or a redeeming investor acting through an Authorized Participant, is subject to a legal restriction with respect to a particular security included in the basket of Redemption Securities, such investor may be paid an equivalent amount of cash in lieu of the security.

Each ETF Fund generally will deliver redemption proceeds within two business days. Because of the schedule of holidays in certain markets, however, the delivery of in-kind redemption proceeds may take longer than two business days. For each market relating to the ETF Fund, the markets and dates where more than seven days would be needed to deliver redemption proceeds are identified under the heading ETF Shares: Foreign Market Information. The ETF Fund will deliver redemption proceeds within the number of days stated under ETF Shares: Foreign Market Information.

In connection with taking delivery of shares of Redemption Securities upon redemption of a Creation Unit, an Authorized Participant, or a Beneficial Owner redeeming through an Authorized Participant, must maintain appropriate security arrangements with a qualified broker-dealer, bank, or other custody provider in each jurisdiction in which any of the Redemption Securities are customarily traded, to which account such Deposit Securities will be delivered.

If appropriate arrangements to take delivery of the Redemption Securities in the applicable foreign jurisdictions, as required in the preceding paragraph, are not in place, or if it is not possible to effect deliveries of the Redemption Securities in such jurisdictions, the ETF Fund may at its discretion effect the redemption in cash. In such case, the investor will receive a cash payment equal to the NAV of the redeemed shares, based on the NAV next calculated after receipt of the redemption request in proper form (minus a transaction fee and an additional variable charge for cash redemptions specified previously, to offset the ETF Fund's transaction costs associated with the disposition of Redemption Securities of the ETF Fund). Redemptions of Creation Units will be subject to compliance with applicable United States federal and state securities laws and the ETF Fund (whether or not it otherwise permits cash redemptions) reserves the right to redeem Creation Units for cash to the extent that the ETF Fund could not lawfully deliver specific Redemption Securities or could not do so without first registering such securities under federal or state law.

If cash redemptions are permitted or required by an ETF Fund, proceeds will be paid to the Authorized Participant as soon as practicable after the date of redemption (within seven calendar days thereafter, except for the instances listed under ETF Shares: Foreign Market Information hereto where more than seven calendar days may be needed).

To the extent contemplated by an Authorized Participant's agreement with the Distributor, in the event the Authorized Participant that has submitted a redemption request in proper form is unable to transfer all or part of the Creation Unit to be redeemed to the ETF Fund prior to Closing Time on the business day of submission of such redemption request, the Distributor may nonetheless accept the redemption in reliance on the undertaking by the Authorized Participant to deliver the missing ETF Shares as soon as possible, which undertaking shall be secured by the Authorized Participant's

delivery and maintenance of collateral consisting of cash having a value at least equal to 103% of the value of the missing ETF Shares in accordance with the ETF Fund's then-effective procedures. In all cases the Fund shall be entitled to charge the redeeming investor for any costs (including investment losses, attorney's fees, and interest) sustained by the ETF Fund as a result of the late delivery or failure to deliver.

Because the Redemption Securities of an ETF Fund may trade on the relevant exchange(s) on days that the exchange is closed, stockholders may not be able to redeem their shares of the ETF Fund, or to purchase or sell ETF Shares on the exchange, on days when the NAVs of the ETF Funds could be significantly affected by events in the relevant foreign markets.

Suspension of Redemption Rights. The right of redemption may be suspended or the date of payment postponed with respect to an ETF Fund (1) for any period during which the NYSE or listing exchange is closed (other than customary weekend and holiday closings), (2) for any period during which trading on the NYSE or listing exchange is suspended or restricted, (3) for any period during which an emergency exists as a result of which disposal of the Fund's portfolio securities or determination of its NAV is not reasonably practicable, or (4) in such other circumstances as the SEC permits.

Precautionary Notes

A precautionary note to ETF investors: The DTC or its nominee will be the registered owner of all outstanding ETF Shares. Your ownership of ETF Shares will be shown on the records of the DTC and the DTC Participant broker through which you hold the shares. Vanguard will not have any record of your ownership. Your account information will be maintained by your broker, which will provide you with account statements, confirmations of your purchases and sales of ETF Shares, and tax information. Your broker also will be responsible for distributing income and capital gains distributions and for ensuring that you receive shareholder reports and other communications from the fund whose ETF Shares you own. You will receive other services (e.g., dividend reinvestment and average cost information) only if your broker offers these services.

You should also be aware that investments in ETF Shares may be subject to certain risks relating to having large shareholders. To the extent that a large number of the Fund's ETF Shares are held by a large shareholder (e.g., an institutional investor, an investment advisor or an affiliate of an investment advisor, an authorized participant, a lead market maker, or another entity), a large redemption by such a shareholder could result in an increase in the ETF's expense ratio, cause the ETF to incur higher transaction costs, cause the ETF to fail to comply with applicable listing standards of the listing exchange upon which it is listed, lead to the realization of taxable capital gains, or cause the remaining shareholders to receive distributions representing a disproportionate share of the ETF's ordinary income and long-term capital gains. In addition, transactions by large shareholders may account for a large percentage of the trading volume on an exchange and may, therefore, have a material upward or downward effect on the market price of the ETF Shares.

A precautionary note to purchasers of Creation Units: You should be aware of certain legal risks unique to investors purchasing Creation Units directly from the issuing fund.

Because new ETF Shares may be issued on an ongoing basis, a "distribution" of ETF Shares could be occurring at any time. Certain activities that you perform as a dealer could, depending on the circumstances, result in your being deemed a participant in the distribution in a manner that could render you a statutory underwriter and subject you to the prospectus delivery and liability provisions of the Securities Act of 1933 (the 1933 Act). For example, you could be deemed a statutory underwriter if you purchase Creation Units from the issuing fund, break them down into the constituent ETF Shares, and sell those shares directly to customers or if you choose to couple the creation of a supply of new ETF Shares with an active selling effort involving solicitation of secondary market demand for ETF Shares. Whether a person is an underwriter depends upon all of the facts and circumstances pertaining to that person's activities, and the examples mentioned here should not be considered a complete description of all the activities that could cause you to be deemed an underwriter.

Dealers who are not "underwriters" but are participating in a distribution (as opposed to engaging in ordinary secondary-market transactions), and thus dealing with ETF Shares as part of an "unsold allotment" within the meaning of Section 4(3)(C) of the 1933 Act, will be unable to take advantage of the prospectus delivery exemption provided by Section 4(3) of the 1933 Act.

A precautionary note to shareholders redeeming Creation Units: An Authorized Participant that is not a “qualified institutional buyer” as defined in Rule 144A under the 1933 Act will not be able to receive, as part of the redemption basket, restricted securities eligible for resale under Rule 144A.

A precautionary note to investment companies: Vanguard ETF Shares are issued by registered investment companies, and therefore the acquisition of such shares by other investment companies and private funds is subject to the restrictions of Section 12(d)(1) of the 1940 Act. SEC Rule 12d1-4 under the 1940 Act permits investments in Vanguard ETF Shares beyond the limits of Section 12(d)(1), subject to the conditions of Rule 12d1-4, as described under the headings “Other Investment Companies”.

ETF Shares: Foreign Market Information

The security settlement cycles and local market holiday schedules in foreign markets, as well as unscheduled foreign market closings, may result in the delivery of redemption proceeds (either in kind or in cash) more than seven days after receipt of a redemption request in proper form. Below are the dates of regular holidays affecting the relevant markets in which the ETF Funds invest and the dates on which, if a redemption request is submitted, the settlement period in a given market will exceed seven days. The proclamation of new holidays, the treatment by market participants of certain days as “informal holidays,” the elimination of existing holidays, or changes in local securities delivery practices could affect the information set forth herein at some time in the future.

Regular Holidays. The calendar year 2023 local market holidays are as follows:

Country	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Albania	2		14, 22	10, 17, 21	1	28			5		28, 29	8, 25
Argentina		20, 21	24	6, 7	1, 25, 26	19, 20		21		13, 16	20	8, 25
Australia	2, 26		6, 13	7, 10, 11, 25	1, 29	5, 12		7, 16	25	2	7	25, 26
Austria				7, 10	1, 29					26		25, 26
Bahrain**	1			23	1	28, 29	19, 27		27			17
Bangladesh**		21	8, 26	19, 23	1, 4	28, 29		15	6, 28	24		25, 31
Belgium				7, 10	1							25, 26
Benin				10, 19, 21	1, 18, 29	29		7, 15	27		1, 15	25
Bermuda	2			7	26	19		3, 4	4		13	25, 26
Bosnia and Herzegovina, Fed. of	2, 3		1	10, 21	1, 2	28						25
Botswana	2, 3			7, 10	1, 18		17, 18			2		25, 26
Brazil		20-22		7, 21		8			7	12	2, 15	29
Bulgaria	2		3	7, 10, 14, 17	1, 8, 24				6, 22			25-27
Burkina Faso				10, 19, 21	1, 18, 29	29		7, 15	27		1, 15	25
Canada	2, 3	20		7	22	26	3	7	4	2, 9	13	25, 26
Chile	2			7	1	21, 26		15	18, 19	9, 27	1	8, 25
China	2, 23-27			5	1-3	22, 23			29	2-6		
China Connect - Bond Connect	2, 23-27			5-7, 10	1-3, 25, 26	22, 23			29	2-6, 20, 23		22, 25, 26
China Connect - Stock Connect	2, 23-27			5-7, 10	1-3, 25, 26	22, 23			29	2-6, 20, 23		22, 25, 26
Colombia	9		20	6, 7	1, 22	12, 19	3, 20	7, 21		16	6, 13	8
Costa Rica				6, 7, 10	1		24	2, 14	15			1, 25
Croatia	6			7, 10	1, 30	8, 22		15			1	25, 26
CyprusT	6	27		7, 10, 14, 17, 18	1	5		15				25, 26

Country	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Cyprus	6	27		7, 10, 14, 17, 18	1	5		15				25, 26
Czech Republic	2, 16	20		7, 10	1, 8, 29	19	4, 5, 6	28	4, 28	9	17, 23	25, 26
Denmark				6, 7, 10	5, 18, 19, 29	5						25, 26
Egypt**	1, 8, 26			16, 17, 21, 22, 25	1	27-29	19, 23		27			
Estonia		24		7, 10	1, 18	23						25, 26
Finland	6			7, 10	1, 18	23						6, 25, 26
France				7, 10	1							25, 26
Georgia, Republic of	2, 19		3, 8	14, 17	9, 12, 26			28			23	
Germany				7, 10	1							25, 26
Ghana	2, 9		6	7, 10	1, 3		7	4	21			1, 25, 26
Greece	6	27		7, 10, 14, 17	1	5		15				25, 26
Guinea-Bissau				10, 19, 21	1, 18, 29	29		7, 15	27		1, 15	25
Hong Kong	2, 23-25			5, 7, 10	1, 26	22				2, 23		25, 26
Hungary			15	7, 10	1, 29					23	1	25, 26
Iceland				6, 7, 10, 20	1, 18, 29			7				25, 26
India	26		7, 22, 30	4, 7, 14	1, 5	28		15, 16	19, 28	2, 24	14, 27	25
Indonesia	23		22, 23	7, 21, 24-26	1, 18	1, 2, 29	19	17	28			25, 26
Ireland	2			7, 10	1							22, 25, 26, 29
Israel**			7	5, 6, 9-12, 25, 26	25		27		17, 24, 25	1-5, 31		
Italy				7, 10	1			15				25, 26
Ivory Coast				10, 19, 21	1, 18, 29	29		7, 15	27		1, 15	25
Japan	2, 3, 9	23	21		3-5		17	11	18	9	3, 23	
Jordan**	1			23, 24	1, 25	27, 28, 29	19		27			25
Kazakhstan	3		8, 21-23		1, 8, 9	28	6	30		25		18
Kenya	2			7, 10, 21	1	1, 28, 29				10, 20		12, 25, 26
Korea, Republic of	2, 23, 24		1		1, 5	6		15	28, 29	3, 9		25
Kuwait**	1	19, 26, 27		23		28, 29	19		28			
Latvia				7, 10	1, 4, 5, 18	23	10				20	25, 26
Lithuania		16		10	1, 18		6	15			1, 2	25, 26
Luxembourg				7, 10	1							25, 26
Malawi	2, 16		3	7, 10, 21	1, 15		6			16		25, 26
Malaysia	23, 24	1			1, 4	6, 29	19	31	28			25

Country	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mali				10, 19, 21	1, 18, 29	29		7, 15	27		1, 15	25
Mauritius	2, 3	1	22		1				20		1, 2	25
Mexico		6	20	6, 7	1						2, 20	12, 25
Morocco	11			21	1	28, 29	19	14, 21	28, 29		6	
Namibia	2		21	7, 10	1, 4, 18, 25							11, 25, 26
Netherlands				7, 10	1							25, 26
New Zealand	2, 3	6		7, 10, 25		5	14			23		25, 26
Niger				10, 19, 21	1, 18, 29	29		7, 15	27		1, 15	25
Nigeria	2			7, 10, 21	1, 29	12, 28, 29			28	2		25, 26
Norway				5, 6, 7, 10	1, 17, 18, 29							25, 26
Oman**	1, 12	18	22	21		27	19		27			
Pakistan	2		23, 24	24, 25	1	29, 30	3, 27, 28	14	27		9	25
Panama	9	20-22		6, 7	1						3, 6, 10, 27	8, 25
Peru				6, 7	1	29	28	30			1	8, 25
Philippines	2			6, 7, 10	1	12		21, 28			1, 2, 27	8, 25
Poland	6			7, 10	1, 3	8		15			1	25, 26, 29
Portugal				7, 10	1							25, 26
Qatar**	1	14	5	23, 24		28, 29						18
Romania	2, 24			14, 17	1	1, 5		15			30	1, 25, 26
Russia	2-6	23, 24	8		1, 8, 9	12					6	
Saudi Arabia**		22		23-25		27-29						
Senegal				10, 19, 21	1, 18, 29	29		7, 15	27		1, 15	25
Serbia	2, 3	15, 16		14, 17	1, 2							
Singapore	2, 23, 24			7	1	29		9			13	25
Slovak Republic	6			7, 10	1, 8		5	29	1, 15		1, 17	25, 26
Slovenia	2	8		7, 10, 27	1, 2			15		31	1	25, 26
South Africa	2		21	7, 10, 27	1	16		9	25			25, 26
Spain				7, 10	1							25, 26
Sri Lanka	6, 16	3	6	5, 7, 13, 14	1, 4, 5	29	3	1, 30	28, 29			25, 26
Srpska, Republic of	2, 3, 6, 9			14, 17	1, 2, 9						21	
Sweden	5, 6			6, 7, 10	1, 17, 18	6, 23					3	25, 26
Switzerland	2			7, 10	1, 18, 29			1				25, 26
Taiwan	2, 18-20, 23-27	27, 28		3-5	1	22, 23			29	9, 10		
Tanzania	12			7, 10, 21, 26	1	28	7	8	27			25, 26
Thailand	2		6	6, 13, 14	1, 4, 5	5	28	1, 14		13, 23		5, 11

Country	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Togo				10, 19, 21	1, 18, 29	29		7, 15	27		1, 15	25
Tunisia			20	21	1	28, 29	19, 25		27			
Turkey				20, 21	1, 19	27-30	30					
Uganda	26	16	8	7, 10, 21	1	9, 28				9		25, 26
Ukraine			8		1, 9	5, 28		24				25
United Arab Emirates - ADX**				20, 21		27-29	19		27			1
United Arab Emirates - DFM**				20, 21		27-29	19		27			1
United Arab Emirates - DIFC**				20, 21		27-29	19		27			1
United Kingdom	2			7, 10	1, 8, 29			28				22, 25, 26, 29
United States	2, 16	20		7	29	19	3, 4		4	9	23, 24	25
Uruguay	6	20, 21		6, 7, 17	1, 22	19	18	25		16	2	25
Vietnam	2, 20, 23-26				1, 2, 3				1, 4			
Zambia	2		8, 13	7, 10, 28	1, 25		3, 4	7		18, 24		25
Zimbabwe	2	21		7, 10, 18	1, 25			14, 15				22, 25, 26

** Market is closed every Friday

Redemption. A redemption request submitted on the following dates in the following foreign markets in calendar year 2023 will result in a settlement period that exceeds seven calendar days.

Argentina

Redemption Date	Redemption Settlement Date	Settlement Period
No settlement cycles (\geq): T+7		

Australia

Redemption Date	Redemption Settlement Date	Settlement Period
No settlement cycles (\geq): T+7		

Austria

Redemption Date	Redemption Settlement Date	Settlement Period
No settlement cycles (\geq): T+7		

Bahrain

Redemption Date	Redemption Settlement Date	Settlement Period
No settlement cycles (\geq): T+7		

Bangladesh

Redemption Date	Redemption Settlement Date	Settlement Period
No settlement cycles (\geq): T+7		

Belgium

Redemption Date	Redemption Settlement Date	Settlement Period
No settlement cycles (\geq): T+7		

Bermuda

Redemption Date	Redemption Settlement Date	Settlement Period
No settlement cycles (\geq): T+7		

Botswana

Redemption Date	Redemption Settlement Date	Settlement Period
12/28/2022	01/04/2023	T+7
12/29/2022	01/05/2023	T+7
12/30/2022	01/06/2023	T+7
04/04/2023	04/11/2023	T+7
04/05/2023	04/12/2023	T+7
04/06/2023	04/13/2023	T+7
07/12/2023	07/19/2023	T+7
07/13/2023	07/20/2023	T+7
07/14/2023	07/21/2023	T+7
12/20/2023	12/27/2023	T+7
12/21/2023	12/28/2023	T+7
12/22/2023	12/29/2023	T+7

Brazil

Redemption Date	Redemption Settlement Date	Settlement Period
No settlement cycles (\geq): T+7		

Bulgaria

Redemption Date	Redemption Settlement Date	Settlement Period
12/21/2023	12/28/2023	T+7
12/22/2023	12/29/2023	T+7

Canada

Redemption Date	Redemption Settlement Date	Settlement Period
No settlement cycles (\geq): T+7		

Chile

Redemption Date	Redemption Settlement Date	Settlement Period
No settlement cycles (\geq): T+7		

China A-Share

Redemption Date	Redemption Settlement Date	Settlement Period
No settlement cycles (\geq): T+7		

China B-Share

Redemption Date	Redemption Settlement Date	Settlement Period
01/18/2023	01/30/2023	T+12
01/19/2023	01/31/2023	T+12
01/20/2023	02/01/2023	T+12
04/26/2023	05/04/2023	T+8
04/27/2023	05/05/2023	T+8
04/28/2023	05/08/2023	T+10
06/19/2023	06/26/2023	T+7
06/20/2023	06/27/2023	T+7
06/21/2023	06/28/2023	T+7
09/26/2023	10/10/2023	T+14
09/26/2023	10/09/2023	T+13
09/27/2023	10/11/2023	T+14
09/27/2023	10/10/2023	T+13
09/28/2023	10/12/2023	T+14
09/28/2023	10/11/2023	T+13
12/20/2023	12/27/2023	T+7
12/21/2023	12/28/2023	T+7
12/22/2023	12/29/2023	T+7

China Connect		
Redemption Date	Redemption Settlement Date	Settlement Period
No settlement cycles (>=): T+7		
Colombia		
Redemption Date	Redemption Settlement Date	Settlement Period
No settlement cycles (>=): T+7		
Costa Rica		
Redemption Date	Redemption Settlement Date	Settlement Period
04/04/2023	04/11/2023	T+7
04/05/2023	04/12/2023	T+7
Croatia		
Redemption Date	Redemption Settlement Date	Settlement Period
04/04/2023	04/11/2023	T+7
04/05/2023	04/12/2023	T+7
Cyprus		
Redemption Date	Redemption Settlement Date	Settlement Period
04/12/2023	04/19/2023	T+7
04/13/2023	04/20/2023	T+7
Czech Republic		
Redemption Date	Redemption Settlement Date	Settlement Period
No settlement cycles (>=): T+7		
Denmark		
Redemption Date	Redemption Settlement Date	Settlement Period
04/04/2023	04/11/2023	T+7
04/05/2023	04/12/2023	T+7
Egypt		
Redemption Date	Redemption Settlement Date	Settlement Period
06/23/2023	06/30/2023	T+7
06/26/2023	07/03/2023	T+7
Estonia		
Redemption Date	Redemption Settlement Date	Settlement Period
No settlement cycles (>=): T+7		
Finland		
Redemption Date	Redemption Settlement Date	Settlement Period
No settlement cycles (>=): T+7		
France		
Redemption Date	Redemption Settlement Date	Settlement Period
No settlement cycles (>=): T+7		
Germany		
Redemption Date	Redemption Settlement Date	Settlement Period
No settlement cycles (>=): T+7		
Ghana		
Redemption Date	Redemption Settlement Date	Settlement Period
04/04/2023	04/11/2023	T+7
04/05/2023	04/12/2023	T+7
04/06/2023	04/13/2023	T+7
12/20/2023	12/27/2023	T+7
12/21/2023	12/28/2023	T+7

Ghana		
Redemption Date	Redemption Settlement Date	Settlement Period
12/22/2023	12/29/2023	T+7
Greece		
Redemption Date	Redemption Settlement Date	Settlement Period
No settlement cycles (>=): T+7		
Hong Kong		
Redemption Date	Redemption Settlement Date	Settlement Period
01/19/2023	01/26/2023	T+7
01/20/2023	01/27/2023	T+7
Hungary		
Redemption Date	Redemption Settlement Date	Settlement Period
No settlement cycles (>=): T+7		
Iceland		
Redemption Date	Redemption Settlement Date	Settlement Period
04/04/2023	04/11/2023	T+7
04/05/2023	04/12/2023	T+7
India		
Redemption Date	Redemption Settlement Date	Settlement Period
No settlement cycles (>=): T+7		
Indonesia		
Redemption Date	Redemption Settlement Date	Settlement Period
04/19/2023	04/27/2023	T+8
04/20/2023	04/28/2023	T+8
Ireland		
Redemption Date	Redemption Settlement Date	Settlement Period
No settlement cycles (>=): T+7		
Israel		
Redemption Date	Redemption Settlement Date	Settlement Period
04/06/2023	04/13/2023	T+7
04/07/2023	04/14/2023	T+7
09/28/2023	10/06/2023	T+8
09/29/2023	10/09/2023	T+10
Italy		
Redemption Date	Redemption Settlement Date	Settlement Period
No settlement cycles (>=): T+7		
Japan		
Redemption Date	Redemption Settlement Date	Settlement Period
05/01/2023	05/08/2023	T+7
05/02/2023	05/09/2022	T+7
Jordan		
Redemption Date	Redemption Settlement Date	Settlement Period
06/23/2023	06/30/2023	T+7
06/26/2023	07/03/2023	T+7
Kazakhstan		
Redemption Date	Redemption Settlement Date	Settlement Period
12/28/2022	01/04/2023	T+7
12/29/2022	01/05/2023	T+7

Kazakhstan

Redemption Date	Redemption Settlement Date	Settlement Period
12/30/2022	01/06/2023	T+7
03/16/2023	03/24/2023	T+8
03/17/2023	03/27/2023	T+10
03/20/2023	03/28/2023	T+8
05/03/2023	05/10/2023	T+7
05/04/2023	05/11/2023	T+7
05/05/2023	05/12/2023	T+7

Kenya

Redemption Date	Redemption Settlement Date	Settlement Period
04/04/2023	04/11/2023	T+7
04/05/2023	04/12/2023	T+7
04/06/2023	04/13/2023	T+7
06/23/2023	06/30/2023	T+7
06/26/2023	07/03/2023	T+7
06/27/2023	07/04/2023	T+7
12/20/2023	12/27/2023	T+7
12/21/2023	12/28/2023	T+7
12/22/2023	12/29/2023	T+7

Kuwait

Redemption Date	Redemption Settlement Date	Settlement Period
06/22/2023	06/30/2023	T+8
06/23/2023	07/03/2023	T+8
06/26/2023	07/04/2023	T+8

Latvia

Redemption Date	Redemption Settlement Date	Settlement Period
No settlement cycles (>=): T+7		

Lithuania

Redemption Date	Redemption Settlement Date	Settlement Period
No settlement cycles (>=): T+7		

Luxembourg

Redemption Date	Redemption Settlement Date	Settlement Period
No settlement cycles (>=): T+7		

Malawi

Redemption Date	Redemption Settlement Date	Settlement Period
04/04/2023	04/11/2023	T+7
04/05/2023	04/12/2023	T+7
04/06/2023	04/13/2023	T+7
12/20/2023	12/27/2023	T+7
12/21/2023	12/28/2023	T+7
12/22/2023	12/29/2023	T+7

Malaysia

Redemption Date	Redemption Settlement Date	Settlement Period
No settlement cycles (>=): T+7		

Mauritius

Redemption Date	Redemption Settlement Date	Settlement Period
12/28/2022	01/04/2023	T+7
12/29/2022	01/05/2023	T+7
12/30/2022	01/06/2023	T+7

Mexico

Redemption Date
No settlement cycles (\geq): T+7

Redemption Settlement Date**Settlement Period****Morocco****Redemption Date**

06/26/2023
06/27/2023
06/28/2023
09/25/2023
09/26/2023
09/27/2023

Redemption Settlement Date

07/03/2023
07/04/2023
07/05/2023
10/02/2023
10/03/2023
10/04/2023

Settlement Period

T+7
T+7
T+7
T+7
T+7
T+7

Namibia**Redemption Date**

12/26/2022
12/27/2022
12/28/2022
12/29/2022
12/30/2022
03/14/2023
03/15/2023
03/16/2023
03/17/2023
03/20/2023
03/31/2023
04/03/2023
04/04/2023
04/05/2023
04/06/2023
04/20/2023
04/21/2023
04/24/2023
04/25/2023
04/26/2023
04/28/2023
05/02/2023
05/03/2023
05/11/2023
05/12/2023
05/15/2023
05/16/2023
05/17/2023
05/19/2023
05/22/2023
05/23/2023
05/24/2023
06/09/2023
06/12/2023
06/13/2023
06/14/2023
06/15/2023
08/02/2023
08/03/2023
08/04/2023
08/07/2023

Redemption Settlement Date

01/03/2023
01/04/2023
01/05/2023
01/06/2023
01/09/2023
03/22/2023
03/23/2023
03/24/2023
03/27/2023
03/28/2023
04/11/2023
04/12/2023
04/13/2023
04/14/2023
04/17/2023
04/28/2023
05/02/2023
05/03/2023
05/05/2023
05/08/2022
05/09/2023
05/10/2023
05/11/2023
05/19/2023
05/22/2023
05/23/2023
05/24/2023
05/26/2023
05/29/2023
05/30/2023
05/31/2023
06/01/2023
06/19/2023
06/20/2023
06/21/2023
06/22/2023
06/23/2023
08/10/2023
08/11/2023
08/14/2023
08/15/2023

Settlement Period

T+8
T+8
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T+11
T+9
T+9
T+9
T+11
T+8
T+11
T+9
T+10
T+12
T+11
T+8
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T+8
T+8
T+10
T+8

Namibia

Redemption Date	Redemption Settlement Date	Settlement Period
08/08/2023	08/16/2023	T+8
09/18/2023	09/26/2023	T+8
09/19/2023	09/27/2023	T+8
09/20/2023	09/28/2023	T+8
09/21/2023	09/29/2023	T+8
09/22/2023	10/02/2023	T+10
12/04/2023	12/12/2023	T+8
12/05/2023	12/13/2023	T+8
12/06/2023	12/14/2023	T+8
12/07/2023	12/15/2023	T+8
12/08/2023	12/18/2023	T+10
12/18/2023	12/27/2023	T+9
12/19/2023	12/28/2023	T+9
12/20/2023	12/29/2023	T+9
12/21/2023	01/02/2024	T+12
12/22/2023	01/03/2024	T+12

Netherlands

Redemption Date	Redemption Settlement Date	Settlement Period
No settlement cycles (>=): T+7		

New Zealand

Redemption Date	Redemption Settlement Date	Settlement Period
No settlement cycles (>=): T+7		

Nigeria

Redemption Date	Redemption Settlement Date	Settlement Period
04/04/2023	04/11/2023	T+7
04/05/2023	04/12/2023	T+7
04/06/2023	04/13/2023	T+7
06/23/2023	06/30/2023	T+7
06/26/2023	07/03/2023	T+7
06/27/2023	07/04/2023	T+7
12/20/2023	12/27/2023	T+7
12/21/2023	12/28/2023	T+7
12/22/2023	12/29/2023	T+7

Norway

Redemption Date	Redemption Settlement Date	Settlement Period
04/03/2023	04/11/2023	T+8
04/04/2023	04/12/2023	T+8

Oman

Redemption Date	Redemption Settlement Date	Settlement Period
04/19/2023	04/27/2023	T+8
04/20/2023	04/28/2023	T+8
04/21/2023	05/01/2023	T+10

Pakistan

Redemption Date	Redemption Settlement Date	Settlement Period
04/20/2023	04/27/2023	T+7
04/21/2023	04/28/2023	T+7
06/26/2023	07/03/2023	T+7
06/27/2023	07/04/2023	T+7

Panama

Redemption Date
No settlement cycles (\geq): T+7

Redemption Settlement Date**Settlement Period****Peru**

Redemption Date
No settlement cycles (\geq): T+7

Redemption Settlement Date**Settlement Period****Philippines****Redemption Date**

04/03/2023
04/04/2023
04/05/2023
10/27/2023
10/30/2023
10/31/2023

Redemption Settlement Date

04/11/2023
04/12/2023
04/13/2023
11/03/2023
11/06/2023
11/07/2023

Settlement Period

T+8
T+8
T+8
T+7
T+7
T+7

Poland

Redemption Date
No settlement cycles (\geq): T+7

Redemption Settlement Date**Settlement Period****Portugal**

Redemption Date
No settlement cycles (\geq): T+7

Redemption Settlement Date**Settlement Period****Qatar**

Redemption Date
06/23/2023
06/26/2023
06/27/2023

Redemption Settlement Date
06/30/2023
07/03/2023
07/04/2023

Settlement Period
T+7
T+7
T+7

Romania

Redemption Date
No settlement cycles (\geq): T+7

Redemption Settlement Date**Settlement Period****Russia**

Redemption Date
12/28/2022
12/29/2022
12/30/2022
02/20/2023
02/21/2023
02/22/2023
05/03/2023
05/04/2023
05/05/2023

Redemption Settlement Date
01/09/2023
01/10/2023
01/11/2023
02/27/2023
02/28/2023
03/01/2023
05/10/2023
05/11/2023
05/12/2023

Settlement Period
T+12
T+12
T+12
T+7
T+7
T+7
T+7
T+7
T+7

Saudi Arabia

Redemption Date
04/20/2023
04/21/2023
06/23/2023
06/26/2023

Redemption Settlement Date
04/27/2023
04/28/2023
06/30/2023
07/03/2023

Settlement Period
T+7
T+7
T+7
T+7

Serbia

Redemption Date
No settlement cycles (\geq): T+7

Redemption Settlement Date**Settlement Period**

Singapore

Redemption Date	Redemption Settlement Date	Settlement Period
No settlement cycles (\geq): T+7		

Slovak Republic

Redemption Date	Redemption Settlement Date	Settlement Period
No settlement cycles (\geq): T+7		

Slovenia

Redemption Date	Redemption Settlement Date	Settlement Period
No settlement cycles (\geq): T+7		

South Africa

Redemption Date	Redemption Settlement Date	Settlement Period
04/04/2023	04/11/2023	T+7
04/05/2023	04/12/2023	T+7
04/06/2023	04/13/2023	T+7
12/20/2023	12/27/2023	T+7
12/21/2023	12/28/2023	T+7
12/22/2023	12/29/2023	T+7

South Korea

Redemption Date	Redemption Settlement Date	Settlement Period
No settlement cycles (\geq): T+7		

Spain

Redemption Date	Redemption Settlement Date	Settlement Period
No settlement cycles (\geq): T+7		

Sri Lanka

Redemption Date	Redemption Settlement Date	Settlement Period
04/10/2023	04/17/2023	T+7
04/11/2023	04/18/2023	T+7
04/12/2023	04/19/2023	T+7
05/01/2023	05/08/2023	T+7
05/02/2023	05/09/2023	T+7
05/03/2023	05/10/2023	T+7
09/25/2023	10/02/2023	T+7
09/26/2023	10/03/2023	T+7
09/27/2023	10/04/2023	T+7
12/20/2023	12/27/2023	T+7
12/21/2023	12/28/2023	T+7
12/22/2023	12/29/2023	T+7

Sweden

Redemption Date	Redemption Settlement Date	Settlement Period
04/03/2023	04/11/2023	T+8
04/04/2023	04/12/2023	T+8

Switzerland

Redemption Date	Redemption Settlement Date	Settlement Period
No settlement cycles (\geq): T+7		

Taiwan

Redemption Date	Redemption Settlement Date	Settlement Period
01/18/2023	01/30/2023	T+12
01/19/2023	01/31/2023	T+12
03/30/2023	04/06/2023	T+7
03/31/2023	04/07/2023	T+7

Tanzania

Redemption Date	Redemption Settlement Date	Settlement Period
04/04/2023	04/11/2023	T+7
04/05/2023	04/12/2023	T+7
04/06/2023	04/13/2023	T+7
12/20/2023	12/27/2023	T+7
12/21/2023	12/28/2023	T+7
12/22/2023	12/29/2023	T+7

Thailand

Redemption Date	Redemption Settlement Date	Settlement Period
No settlement cycles (>=): T+7		

Tunisia

Redemption Date	Redemption Settlement Date	Settlement Period
06/23/2023	06/30/2023	T+7
06/26/2023	07/03/2023	T+7
06/27/2023	07/04/2023	T+7
07/13/2023	07/20/2023	T+7
07/14/2023	07/21/2023	T+7
07/17/2023	07/24/2023	T+7

Turkey

Redemption Date	Redemption Settlement Date	Settlement Period
06/23/2023	07/03/2023	T+10
06/26/2023	07/04/2023	T+8

Uganda

Redemption Date	Redemption Settlement Date	Settlement Period
04/04/2023	04/11/2023	T+7
04/05/2023	04/12/2023	T+7
04/06/2023	04/13/2023	T+7
12/20/2023	12/27/2023	T+7
12/21/2023	12/28/2023	T+7
12/22/2023	12/29/2023	T+7

Ukraine

Redemption Date	Redemption Settlement Date	Settlement Period
No settlement cycles (>=): T+7		

United Arab Emirates

Redemption Date	Redemption Settlement Date	Settlement Period
04/18/2023	04/25/2023	T+7
04/19/2023	04/26/2023	T+7
06/26/2023	07/03/2023	T+7
06/27/2023	07/04/2023	T+7

United Kingdom

Redemption Date	Redemption Settlement Date	Settlement Period
No settlement cycles (>=): T+7		

United States

Redemption Date	Redemption Settlement Date	Settlement Period
No settlement cycles (>=): T+7		

Uruguay

Redemption Date	Redemption Settlement Date	Settlement Period
No settlement cycles (>=): T+7		

Vietnam

Redemption Date	Redemption Settlement Date	Settlement Period
01/18/2023	01/27/2023	T+9
01/19/2023	01/30/2023	T+11
04/27/2023	05/04/2023	T+7
04/28/2023	05/05/2023	T+7

WAEMU

Redemption Date	Redemption Settlement Date	Settlement Period
No settlement cycles (\geq): T+7		

Zambia

Redemption Date	Redemption Settlement Date	Settlement Period
04/04/2023	04/11/2023	T+7
04/05/2023	04/12/2023	T+7
04/06/2023	04/13/2023	T+7
06/28/2023	07/05/2023	T+7
06/29/2023	07/06/2023	T+7
06/30/2023	07/07/2023	T+7

Zimbabwe

Redemption Date	Redemption Settlement Date	Settlement Period
04/04/2023	04/11/2023	T+7
04/05/2023	04/12/2023	T+7
04/06/2023	04/13/2023	T+7
08/09/2023	08/16/2023	T+7
08/10/2023	08/17/2023	T+7
08/11/2023	08/18/2023	T+7
12/19/2023	12/27/2023	T+8
12/20/2023	12/28/2023	T+8
12/21/2023	12/29/2023	T+8

In 2023, the maximum number of calendar days necessary to satisfy a redemption request would be 14 days.

FINANCIAL STATEMENTS

Each Fund's Financial Statements for the fiscal year ended October 31, 2022, appearing in the Funds' 2022 [Annual Report](#) to Shareholders, and the reports thereon of PricewaterhouseCoopers LLP, an independent registered public accounting firm, also appearing therein, are incorporated by reference into this Statement of Additional Information. For a more complete discussion of each Fund's performance, please see the Funds' Annual and Semiannual Reports to Shareholders, which may be obtained without charge.

APPENDIX A

Summary of the Vanguard-Advised Funds Proxy Voting Policy

The funds for which Vanguard acts as investment advisor (Vanguard-advised funds) retain authority to vote proxies received for the shares of equity securities held in each fund. The Board of Trustees (the Board) for the Vanguard-advised funds has adopted proxy voting procedures and guidelines to govern proxy voting for each portfolio retaining proxy voting authority.

The Investment Stewardship Oversight Committee (the Committee), comprised primarily of fund officers and subject to the procedures described below, oversees the Vanguard-advised funds' proxy voting. The Committee reports directly to the Board. Vanguard is subject to these procedures and the proxy voting policies to the extent that they call for Vanguard to administer the voting process and implement the resulting voting decisions, and for these purposes the voting policies have also been approved by the Board of Directors of Vanguard.

The voting principles and policies adopted by the Board provide a framework for assessing each proposal and seek to ensure that each vote is cast in the best interests of each fund. Under the voting policies, each proposal is evaluated on its merits, based on the particular facts and circumstances presented at the company in question. For more information on the funds' proxy voting policies, please visit about.vanguard.com/investment-stewardship.

I. Investment Stewardship Team

The Investment Stewardship Team administers the day-to-day operation of the funds' proxy voting process, overseen by the Committee. The Investment Stewardship Team performs the following functions: (1) managing and conducting due diligence of proxy voting vendors; (2) reconciling share positions; (3) analyzing proxy proposals using factors described in the voting policies; (4) determining and addressing potential or actual conflicts of interest that may be presented by a particular proxy; and (5) voting proxies. The Investment Stewardship Team also prepares periodic and special reports for the Board and proposes amendments to the procedures and voting policies.

II. Investment Stewardship Oversight Committee

The Board, including a majority of the independent trustees, appoints the members of the Committee (which is comprised primarily of fund officers). The Committee works with the Investment Stewardship Team to provide reports and other guidance to the Board regarding proxy voting by the funds. The Committee has an obligation to exercise its decision-making authority in accordance with the Board's instructions as set forth in the funds' proxy voting procedures and voting policies and subject to the fiduciary standards of good faith, fairness, and Vanguard's Code of Ethics. The Committee may advise the Investment Stewardship Team on how to best apply the Board's instructions as set forth in the voting policies or refer the matter to the Board, which has ultimate decision-making authority for the funds. The Board reviews the procedures and voting policies annually and modifies them from time to time upon the recommendation of the Committee and in consultation with the Investment Stewardship Team.

III. Proxy Voting Principles

Vanguard's investment stewardship activities are grounded in four principles of good governance:

- 1) *Board composition:* We believe good governance begins with a great board of directors. Our primary interest is to ensure that the individuals who represent the interests of all shareholders are independent, committed, capable, and diverse in personal characteristics, skills, and experience.
- 2) *Oversight of strategy and risk:* We believe that boards are responsible for effective oversight of a company's long-term strategy and material risks, including environmental, social, and governance risks.
- 3) *Executive compensation:* We believe that performance-linked compensation (or remuneration) policies and practices are fundamental drivers of sustainable, long-term value.
- 4) *Shareholder rights:* We believe that companies should have in place governance structures that serve to safeguard and support foundational rights for shareholders.

IV. Evaluation of Proxies

For ease of reference, the procedures and guidelines often refer to all funds. However, the processes and practices seek to ensure that proxy voting decisions are suitable for individual funds. For most proxy proposals, particularly those involving corporate governance, the evaluation could result in the funds having a common interest in the matter and, accordingly, each fund casting votes in the same manner. In other cases, however, a fund may vote differently from other funds if doing so is in the best interest of the individual fund.

The voting policies do not permit the Board to delegate voting discretion to a third party that does not serve as a fiduciary for the funds. Because many factors bear on each decision, the voting policies incorporate factors that should be considered in each voting decision. A fund may refrain from voting some or all of its shares or vote in a particular way if doing so would be in the fund's and its shareholders' best interests. These circumstances may arise, for example, if the expected cost of voting exceeds the expected benefits of voting, if exercising the vote would result in the imposition of trading or other restrictions, or if a fund (or all Vanguard funds in the aggregate) were to own more than the permissible maximum percentage of a company's stock (as determined by the company's governing documents or by applicable law, regulation, or regulatory agreement).

In evaluating proxy proposals, the Investment Stewardship Team considers information from many sources, which could include, but is not limited to, the perspectives of the company management or shareholders presenting a proposal, independent proxy research services, or proprietary research. Additionally, data and recommendations from proxy advisors serve as one of many inputs into our research process.

While serving as a framework, the voting policies cannot contemplate all possible proposals with which a fund may be presented. In the absence of a specific guideline for a particular proposal (e.g., in the case of a transactional issue or contested proxy), the Investment Stewardship Team, under the supervision of the Committee, will evaluate the matter and cast the fund's vote in a manner that is in the fund's best interest, subject to the individual circumstances of the fund.

V. Conflicts of Interest

Vanguard takes seriously its commitment to avoid potential conflicts of interest. Vanguard funds invest in thousands of publicly listed companies worldwide. Those companies may include clients, potential clients, vendors, or competitors. Some companies may employ Vanguard trustees, former Vanguard executives, or family members of Vanguard personnel who have direct involvement in Vanguard's Investment Stewardship program.

Vanguard's approach to mitigating conflicts of interest begins with the funds' proxy voting procedures. The procedures require that voting personnel act as fiduciaries and must conduct their activities at all times in accordance with the following standards: (i) fund shareholders' interests come first; (ii) conflicts of interest must be avoided; (iii) and compromising situations must be avoided.

We maintain an important separation between Vanguard's Investment Stewardship Team and other groups within Vanguard that are responsible for sales, marketing, client service, and vendor/partner relationships. Proxy voting personnel are required to disclose potential conflicts of interest and must recuse themselves from all voting decisions and engagement activities in such instances. In certain circumstances, Vanguard may refrain from voting shares of a company, or may engage an independent third-party fiduciary to vote proxies.

Each externally managed fund has adopted the proxy voting guidelines of its advisor(s) and votes in accordance with the external advisors' guidelines and procedures. Each advisor has its own procedures for managing conflicts of interest in the best interests of fund shareholders.

VI. Shareholder Proposals

Shareholder proposals are evaluated in the context of the general corporate governance principle that a company's board has ultimate responsibility for providing effective ongoing oversight of relevant sector and company-specific risks, including risks related to environmental and social matters. Each proposal is evaluated on its merits and in the context of the particular facts and circumstances at the company in question and supported when there is a logically demonstrable linkage between the specific proposal and long-term shareholder value of the company. Some of the factors considered when evaluating shareholder proposals include the materiality of the risk addressed by the proposal, the quality of the current disclosures/business practices, and any progress by the company toward the adoption of best practices and/or industry norms.

VII. Voting in Markets Outside the United States

Corporate governance standards, disclosure requirements, and voting mechanics vary greatly among the markets outside the United States (U.S.) in which the funds may invest. Each fund's votes will be used, where applicable, to support improvements in governance and disclosure by each fund's portfolio companies. Matters presented by non-U.S. portfolio companies will be evaluated in the foregoing context, as well as in accordance with local market standards and best practices. Votes are cast for each fund in a manner philosophically consistent with the voting policies, taking into account differing practices by market.

In many other markets, voting proxies will result in a fund being prohibited from selling the shares for a period of time due to requirements known as "share-blocking" or reregistration. Generally, the value of voting is unlikely to outweigh the loss of liquidity imposed by these requirements on the funds. In such instances, the funds will generally abstain from voting.

The costs of voting (e.g., custodian fees, vote agency fees) in other markets may be substantially higher than for U.S. holdings. As such, the fund may limit its voting on foreign holdings in instances in which the issues presented are unlikely to have a material impact on shareholder value.

VIII. Voting Shares of a Company That Has an Ownership Limitation

Certain companies have provisions in their governing documents or other agreements that restrict stock ownership in excess of a specified limit. Typically, these ownership restrictions are included in the governing documents of real estate investment trusts but may be included in other companies' governing documents. A company's governing documents normally allow the company to grant a waiver of these ownership limits, which would allow a fund to exceed the stated ownership limit. Sometimes a company will grant a waiver without restriction. From time to time, a company may grant a waiver only if a fund (or funds) agrees to not vote the company's shares in excess of the normal specified limit. In such a circumstance, a fund may refrain from voting shares if owning the shares beyond the company's specified limit is in the best interests of the fund and its shareholders.

In addition, applicable law may require prior regulatory approval to permit ownership of certain regulated issuer's voting securities above certain limits or may impose other restrictions on owners of more than a certain percentage of a regulated issuer's voting shares. The Board has authorized the funds to vote shares above these limits in the same proportion as votes cast by the issuer's entire shareholder base (i.e., mirror vote), or to refrain from voting excess shares. Further, the Board has adopted policies that will result in certain funds mirror voting a higher proportion of the shares they own in a regulated issuer in order to permit certain other funds (generally advised by managers not affiliated with Vanguard) to mirror vote none, or a lower proportion of, their shares in such regulated issuer.

IX. Voting on a Fund's Holdings of Other Vanguard Funds

Certain Vanguard funds (owner funds) may, from time to time, own shares of other Vanguard funds (underlying funds). If an underlying fund submits a matter to a vote of its shareholders, votes for and against such matters on behalf of the owner funds will be cast in the same proportion as the votes of the other shareholders in the underlying fund.

X. Securities Lending

There may be occasions when Vanguard needs to restrict lending of and/or recall securities that are out on loan in order to vote in a shareholder meeting. Vanguard has processes to monitor securities on loan and to evaluate any circumstances that may require us to restrict and/or recall the stock. In making this decision, we consider:

- The subject of the vote and whether, based on our knowledge and experience, we believe the topic is potentially material to the corporate governance and/or long-term performance of the company;
- The Vanguard funds' individual and/or aggregate equity investment in a company, and whether we estimate that voting Vanguard funds' shares would affect the shareholder meeting outcome; and
- The long-term impact to our fund shareholders, evaluating whether we believe the benefits of voting a company's shares would outweigh the benefits of stock lending revenues in a particular instance.

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