PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Market Information for Common Stock

Our Class A common stock has been listed on the Nasdaq Global Select Market under the symbol "HOOD" since July 29, 2021. Prior to that time, there was no public market for our stock.

Our Class B and Class C common stock are not listed on any stock exchange nor traded on any public market.

Holders of Record

As of February 21, 2023, there were 81 stockholders of record of our Class A common stock. Because many of our shares of Class A common stock are held by brokers and other institutions on behalf of stockholders, we are unable to estimate the total number of stockholders represented by these record holders. As of February 21, 2023, there were seven stockholders of record of our Class B common stock and zero stockholders of record of our Class C common stock.

Dividend Policy

We have never declared or paid cash dividends on our capital stock. We intend to retain all available funds and future earnings, if any, to fund the development and expansion of our business, and we do not anticipate declaring or paying any cash dividends in the foreseeable future. Any future determination regarding the declaration and payment of dividends, if any, will be at the discretion of our board of directors and will depend on then-existing conditions, including our financial condition, results of operations, contractual restrictions, capital requirements, business prospects, and other factors our board of directors may deem relevant. In addition, the terms of our current credit facilities contain restrictions on our ability to pay cash dividends.

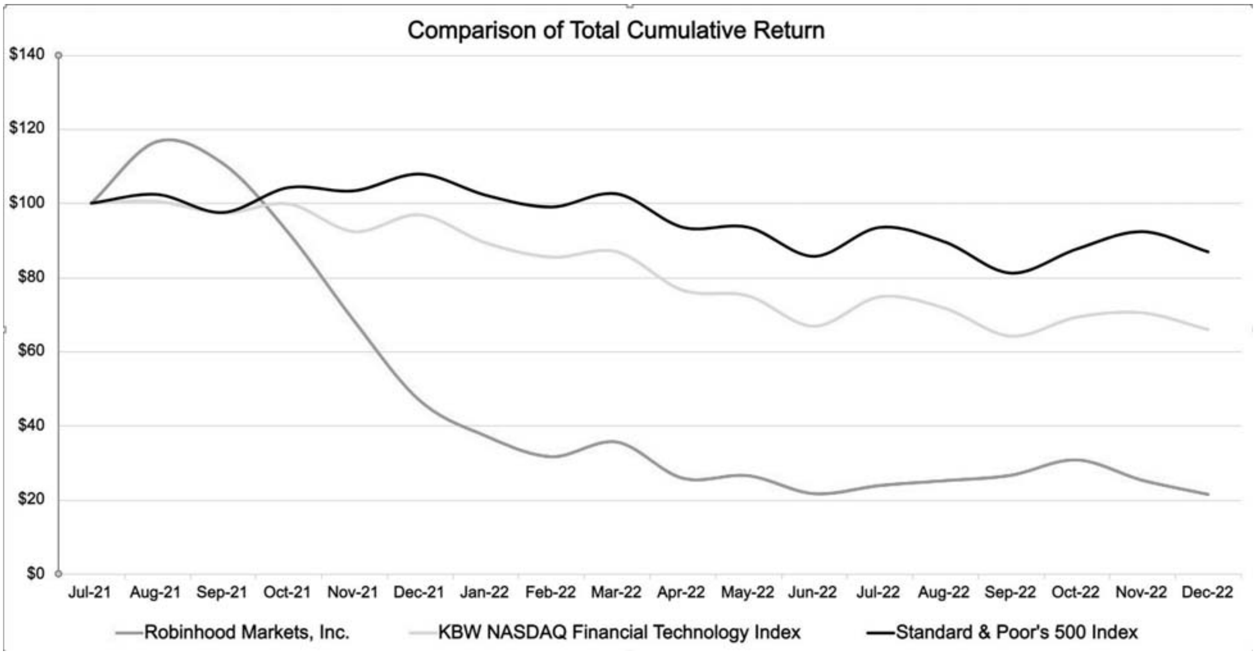
Sales of Unregistered Securities

From January 1, 2022 through December 31, 2022 we did not sell any shares of Class A common stock (or other equity securities of Robinhood Markets, Inc.) that were not registered under the Securities Act.

Use of IPO Proceeds

As previously disclosed, our total net proceeds from the sale of Class A common stock by us in the IPO were approximately $2.05 billion after deducting the underwriting discounts and commissions. The offer and sale of the shares in the IPO were registered under the Securities Act pursuant to a registration statement on Form S-1 (File No. 333-257602), which was declared effective by the SEC on July 28, 2021. We used a portion of the net proceeds we received in the IPO to repay borrowings made under our revolving lines of credit (which borrowing were utilized to fund tax withholdings due prior to the IPO closing as a result of RSU settlements in connection with the pricing of our IPO). We used the remaining IPO proceeds for working capital, capital expenditures, and general corporate purposes. No proceeds currently remain from the IPO.

Stock Performance Graph



This performance graph shall not be deemed "soliciting material" or to be "filed" with the SEC, for purposes of Section 18 of the Exchange Act, or otherwise subject to the liabilities under that Section, and shall not be deemed to be incorporated by reference into any of our filings under the Securities Act.

The graph above compares the cumulative total stockholder return on our Class A common stock with the cumulative total return of the KBW NASDAQ Financial Technology Index and the Standard & Poor's 500 Index. The graph assumes (i) that $100 was invested at the market close on July 29, 2021, the date that our Class A common stock commenced trading on the Nasdaq Global Select Market, in each of our Class A common stock, the KBW NASDAQ Financial Technology Index, and the Standard & Poor's 500 Index and (ii) reinvestment of gross dividends. The graph uses the closing market price on July 29, 2021 of $34.82 per share as the initial value of our Class A common stock. The stock price performance shown in the graph represents past performance and should not be considered an indication of future stock price performance.

ITEM 6. [REMOVED AND RESERVED]

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

This section presents management's perspective on our financial condition and results of operations, including performance metrics that management uses to assess company performance. The following discussion and analysis is intended to highlight and supplement data and information presented elsewhere in this Annual Report, and should be read in conjunction with our consolidated financial statements and notes elsewhere in this Annual Report. It is also intended to provide you with information that will assist you in understanding our consolidated financial statements, the changes in key items in those consolidated financial statements from year to year, and the primary factors that accounted for those changes. To the extent that this discussion describes prior performance, the descriptions relate only to the periods listed, which might not be indicative of our future financial outcomes. In addition to historical information, this discussion contains forward-looking statements that involve risks, uncertainties and assumptions that could cause results to differ materially from management's expectations. Factors that could cause such differences are discussed in the sections titled "Cautionary Note Regarding Forward-Looking Statements" and "Risk Factors."

We refer to our "users" and our "customers" interchangeably throughout this Annual Report to refer to individuals who hold accounts on our platform.

Glossary Terms

- **Automated Customer Account Transfer Service (ACATS)**: A system that automates and standardizes procedures for the transfer of assets in a customer account from one brokerage firm and/or bank to another.

- **Churned Account:** An account is considered "Churned" if it was ever a New Funded Account whose account balance (measured as the fair value of assets in the account less any amount due from the user and excluding certain Company-initiated Credits) drops to or below zero for at least 45 consecutive calendar days. Negative balances typically result from Fraudulent Deposit Transactions (as defined below) and unauthorized debit card use, and less often, from margin loans.

- **Company-initiated Credits:** Company-initiated Credits are amounts that are deposited into a Robinhood Account by the Company with no action taken by the user. Examples of Company-initiated Credits excluded for purposes of identifying Churned Accounts and Resurrected Accounts are price correction credits, related interest adjustments, and fee adjustments.

- **Daily Average Revenue Trades (DARTs)**: We define DARTs for any asset class as the total number of revenue generating trades for such asset class executed during a given period divided by the number of trading days for such asset class in that period.

- **Fraudulent Deposit Transactions:** Occur when users initiate deposits into their accounts, make trades on our platform using a short-term extension of credit from us, and then repatriate or reverse the deposits, resulting in a loss to us of the credited amount.

- **Margin Book:** We define Margin Book as our period-end aggregate outstanding margin loan balances receivable (i.e., the period-end total amount we are owed by customers on loans made for the purchase of securities, supported by a pledge of assets in their margin-enabled brokerage accounts).

- **New Funded Account:** We define a New Funded Account as a Robinhood Account into which the user makes an initial deposit, money transfer or asset transfer, of any amount during the relevant period.

- **Notional Trading Volume:** We define Notional Trading Volume for any specified asset class as the aggregate dollar value (purchase price or sale price as applicable) of trades executed in that asset class over a specified period of time.

- **Resurrected Account:** An account is considered "Resurrected" in a stated period if it was a Churned Account as of the end of the immediately preceding period and its balance (excluding certain Company-initiated Credits) rises above zero.

- **Robinhood Account**: We define a Robinhood Account as a unique log-in that provides the account user access to any and all of the Robinhood products offered on our platform.

Key Performance Metrics

- **Net Cumulative Funded Accounts (NCFA)**: We define Net Cumulative Funded Accounts as New Funded Accounts less Churned Accounts plus Resurrected Accounts.

- **Monthly Active Users (MAU)**: We define MAUs as the number of unique Robinhood Accounts who meet one of the following criteria at any point during a specified calendar month: a) executes a debit card transaction, b) transitions between two different screens on a mobile device while logged into their Robinhood Account or c) loads a page in a web browser while logged into their Robinhood Account. A user need not satisfy these conditions on a recurring monthly basis or have a funded account to be included in MAU. MAU figures in this Annual Report reflect MAU for the last month of the relevant period presented. We utilize MAU to measure how many customers interact with our products and services during a given month. MAU does not measure the frequency or duration of the interaction, but we consider it a useful indicator for engagement. Additionally, MAUs are positively correlated with, but are not indicative of, the performance of revenue and other key performance indicators.

- **Asset Under Custody (AUC)**: We define AUC as the sum of the fair value of all equities, options, cryptocurrency and cash held by users in their accounts, net of receivables from users, as of a stated date or period end on a trade date basis. Net Deposits and net market gains (losses) drive the change in AUC in any given period.

- **Net Deposits:** We define Net Deposits as all cash deposits and asset transfers received from customers, net of reversals, customer cash withdrawals, and other assets transferred out of our platform (assets transferred in or out include debit card transactions, ACATS transfers, and custodial crypto wallet transfers) for a stated period.

- **Average Revenues Per User (ARPU)**: We define ARPU as total revenue for a given period divided by the average of Net Cumulative Funded Accounts on the last day of that period and the last day of the immediately preceding period.

Overview

With respect to the year ended December 31, 2022, as compared to the year ended December 31, 2021:

- we generated total net revenues of $1.36 billion compared to $1.82 billion, for a year-over-year decrease of 25%;
- we incurred a net loss of $1.03 billion, or -$1.17 per share, compared to net loss of $3.69 billion, or -$7.49 per share; net loss in 2021 included expense of $2.05 billion associated with the change in fair value of convertible notes and warrant liability issued in February 2021;
- operating expenses were $2.37 billion compared to $3.46 billion, for a year-over-year decrease of 31%;
    - share-based compensation ("SBC") expense totaled $654 million compared to $1.57 billion, for a year-over-year decrease of 58%. SBC expense for the year ended December 31, 2021, was primarily related to the cumulative one-time expense recognized upon our IPO. SBC expense for the year ended December 31, 2022 included $77 million net reversals of previously recognized expense in connection with both the April 2022 Restructuring and August 2022 Restructuring;
- our Adjusted EBITDA (non-GAAP) was negative $94 million compared to positive $33 million;
- we had NCFA of 23.0 million compared to 22.7 million, for a year-over-year increase of 1%;
- we had MAU of 11.4 million in December 2022 compared to 17.3 million in December 2021, for a year-over-year decrease of 34%;
- we had AUC of $62.2 billion compared to $98.0 billion, for a year-over-year decrease of 37%;
- Net Deposits were $18.4 billion compared to $27.1 billion, for a year-over-year decrease of 32%, which translates to a growth rate of 19% relative to AUC for the year ended December 31, 2021;
- we had ARPU of $60 compared to $103, for a year-over-year decrease of 42%.

Adjusted EBITDA is a non-GAAP financial measure. For more information about Adjusted EBITDA, including the definition and limitations of such measure, and a reconciliation of net income (loss) to Adjusted EBITDA, please see "—Non-GAAP Financial Measures."

Recent Developments

Restructurings

In 2020 and the first half of 2021, we went through a period of hyper growth accelerated by several factors including pandemic lockdowns, low interest rates, and fiscal stimulus. From the beginning of 2020 to the end of 2021, we grew net funded accounts from 5.1 million to 22.7 million and revenue from $278 million in 2019 to $1.82 billion in 2021. To meet customer and market demands, we grew our headcount from 700 at the end of 2019 to nearly 3,900 at the end of the first quarter of 2022. This rapid headcount growth led to some duplicate roles and job functions with more layers and complexity than were optimal. As a result, we completed two restructurings, detailed below, and significantly reduced our hiring in 2022.

April 2022 Restructuring. On April 26, 2022, we announced a reduction in force involving approximately 330 employees, representing approximately 9% of our full-time employees at the time.

August 2022 Restructuring. On August 2, 2022 we announced an additional reduction in force involving approximately 780 employees, representing approximately 23% of our full-time employees at the time, the planned closure of two offices, and related matters. These actions were part of a Company reorganization into a GM structure under which GMs have started to assume broad responsibility for our individual businesses. As we continued to execute the August 2022 Restructuring, our lower headcount led us to evaluate our real estate portfolio. On September 30, 2022, we decided to partially or completely close five additional offices as part of the August 2022 Restructuring, four of which were not occupied.

See Note 6 - Restructuring Activities and Note 13 - Common Stock and Stockholders' (Deficit) Equity to our consolidated financial statements in this Annual Report for further information relating to these restructurings.

Termination of Ziglu Stock Purchase Agreement

On April 16, 2022, we entered into a definitive stock purchase agreement to acquire all outstanding equity of Ziglu. Advances of $12 million made to Ziglu during the year were accounted for as non-marketable equity securities under the fair value alternative, considering the securities lacked a readily determinable fair value. In February 2023, we notified Ziglu of the termination of the stock purchase agreement. Due to this and other factors, we have adjusted the carrying value of our investment in Ziglu to zero as of December 31, 2022. See Note 18 - Subsequent Events to our consolidated financial statements in this Annual Report for further information.

COVID-19 Update

The COVID-19 pandemic has resulted, in part, in inefficiencies and delays in our business, operational challenges, additional costs related to business continuity initiatives as our workforce continues to work remotely, and increased vulnerability to cybersecurity attacks or other privacy or data security incidents. The extent of the impact of any COVID-19 resurgence or emergence of similar public health threats on our business, financial condition, and results of operations will depend largely on future developments, including the duration of COVID-19 resurgence or similar public health threat and actions taken to contain or address their impact, their impact on capital and financial markets, and the related impact on the financial circumstances of our customers, all of which are highly uncertain and difficult to predict.

Key Performance Metrics

In addition to the measures presented in our consolidated financial statements, we use the following key performance metrics to help us evaluate our business, identify trends affecting our business, formulate business plans, and make strategic decisions:

	Year Ended December 31,		
	2020	2021	2022
NCFA[1] *(in millions)*	12.5	22.7	23.0
MAU *(in millions)*	11.7	17.3	11.4
AUC[2] *(in billions)*	$ 63.0	$ 98.0	$ 62.2
Net Deposits *(in billions)*	$ 31.0	$ 27.1	$ 18.4
ARPU *(in dollars)*	$ 109	$ 103	$ 60

(1) The following table describes the annual changes within NCFA:

(in millions)	Year Ended December 31, 2020	2021	2022
Beginning NCFA	5.1	12.5	22.7
New funded accounts	8.0	12.2	1.3
Resurrected accounts	0.3	0.5	0.2
Churned accounts	(0.9)	(2.5)	(1.2)
Ending NCFA	12.5	22.7	23.0

(2) The following table sets out the components of AUC by type of asset:

(in billions)	Year Ended December 31, 2020	2021	2022
Equities	$ 53.0	$ 72.1	$ 45.8
Cryptocurrencies	3.5	22.1	8.4
Options	2.1	1.5	0.3
Cash held by users	7.9	8.8	10.8
Receivables from users	(3.5)	(6.5)	(3.1)
AUC	$ 63.0	$ 98.0	$ 62.2

The following table describes the changes within AUC:

(in billions)	Year Ended December 31, 2020	2021	2022
Beginning AUC	$ 14.1	$ 63.0	$ 98.0
Net Deposits	31.0	27.1	18.4
Net market losses	17.9	7.9	(54.2)
Ending AUC	$ 63.0	$ 98.0	$ 62.2

Non-GAAP Financial Measures

Adjusted EBITDA

We collect and analyze operating and financial data to evaluate the health of our business, allocate our resources and assess our performance. In addition to total net revenues, net income (loss), and other results under GAAP, we utilize non-GAAP calculations of adjusted earnings before interest, taxes, depreciation, and amortization ("Adjusted EBITDA"). Adjusted EBITDA is defined as net income (loss), excluding (i) interest expenses related to credit facilities, (ii) provision for (benefit from) income taxes, (iii) depreciation and amortization, (iv) share-based compensation, (v) change in fair value of convertible notes and warrant liability, (vi) significant legal and tax settlements and reserves, and (vii) other significant gains, losses, and expenses (such as impairments, restructuring charges, and business acquisition- or disposition-related expenses) that we believe are not indicative of our ongoing results. This non-GAAP financial information is presented for supplemental informational purposes only, should not be considered a substitute for or superior to financial information presented in accordance with GAAP, and may be different from similarly titled non-GAAP measures used by other companies.

The above items are excluded from our Adjusted EBITDA measure because these items are non-cash in nature, or because the amount and timing of these items are unpredictable, are not driven by core results of operations, and render comparisons with prior periods and competitors less meaningful. We believe Adjusted EBITDA provides useful information to investors and others in understanding and evaluating our results of operations, as well as providing a useful measure for period-to-period comparisons of our business performance. Moreover, Adjusted EBITDA is a key measurement used by our management internally to make operating decisions, including those related to operating expenses, evaluate performance, and perform strategic planning and annual budgeting. The following table presents a reconciliation of net income (loss), which is the most directly comparable GAAP measure, to Adjusted EBITDA:

	Year Ended December 31,		
(in millions)	2020	2021	2022
Net income (loss)	$ 7	$ (3,687)	$ (1,028)
Add:			
Interest expenses related to credit facilities	5	20	24
Provision for (benefit from) income taxes	6	2	1
Depreciation and amortization	10	26	61
EBITDA (non-GAAP)	28	(3,639)	(942)
Share-based compensation(1)	24	1,572	654
Change in fair value of convertible notes and warrant liability	—	2,045	—
Impairment of Ziglu equity securities(2)	—	—	12
Restructuring charges(3)	—	—	105
Significant legal and tax settlements and reserves	102	55	20
Q4 2022 Processing Error(4)	—	—	57
Adjusted EBITDA (non-GAAP)	$ 154	$ 33	$ (94)

(1) For the year ended December 31, 2022, share-based compensation benefited from restructuring-related net reversals of previously recognized expense was $77 million in connection with both the April 2022 Restructuring and August 2022 Restructuring (see Note 13 - Common Stock and Stockholders' (Deficit) Equity, to our consolidated financial statements in this Annual Report for further information).

(2) Partially as a result of the termination of the stock purchase agreement, which occurred in February 2023, the advances made to Ziglu accounted for as non-marketable equity securities were impaired to a carrying value of zero.

(3) Restructuring charges for the year ended December 31, 2022 related to both the April 2022 Restructuring and August 2022 Restructuring and primarily consisting of $45 million of impairment and $9 million of accelerated depreciation, in each case relating to office closures, and $51 million of cash charges for employee-related wages, benefits and severance. See Note 6 - Restructuring Activities, to our consolidated financial statements in this Annual Report for further information.

(4) Q4 2022 Processing Error: Delays in notification from third parties and process failures within Robinhood's brokerage systems and operations in connection with the handling of a 1-for-25 reverse stock split transaction of Cosmos Health, Inc. ("COSM"), a NASDAQ-listed company, on December 16, 2022, allowed customers, for a limited time, to execute trades selling more shares than they held in their accounts. This caused a temporary short position in that ticker symbol which Robinhood covered out of corporate cash within the same trading day. The resulting loss of $57 million is recorded within brokerage and transaction in the consolidated statement of operations.

Key Factors Driving Our Performance

Growing Our Customer Base

Sustaining our growth requires continued adoption of our platform by new customers. We will continue to introduce products and features to attract new customers and we will seek to increase brand awareness and customer adoption of our platform through broad-scale brand marketing and the Robinhood Referral Program (defined below).

Expanding Our Relationship with Existing Customers

Our revenue has generally increased over time as we have introduced new products and features to our customers and as our customers have increased their usage of our platform. We aim to grow with our customers over time as they build and manage their wealth. Our ability to expand our relationship with our customers will be an important contributor to our long-term growth. Additionally, we strive to strengthen our relationships with our customers by responding to customer feedback not only through the introduction of new products, but also through improvements to our existing products and services.

Investing in Our Platform

We intend to continue to invest in our platform capabilities and regulatory and compliance functions to support new and existing customers and products that we believe will drive our growth. As our customer base and platform functionalities expand, areas of investment priority will likely include product innovation, educational content, and technology and infrastructure improvements. We believe these investments will contribute to our long-term growth.

Customer Interest in Investing and Saving

Our results of operations are impacted by the overall health of the economy and retail investing and saving behaviors, which include the following key drivers:

- *Seasonality*. Our business can be subject to seasonal fluctuations due to such factors as retail interest in investing, overall number of market participants and trading volumes, varying numbers of trading days from quarter-to-quarter, declines in trading activity around holidays, and proxy and investor communications activity during proxy season. Seasonal trends may be superseded by market or macroeconomic events, which can have a significant impact on equity and cryptocurrency valuations and trading activity.

- *Consumer Behavior*. Consumer behavior varies over time and is affected by numerous conditions. For example, behavior might be impacted by social or economic factors such as changes in disposable income levels, general interest in investing, and volatility in the stock and cryptocurrency markets. There might also be high profile initial public offerings, or idiosyncratic events impacting single companies, that impact consumer behavior.

- *Market Trends*. As financial markets grow and contract, our customers' investing, saving, and spending behaviors are affected. We have seen periods both of general macroeconomic growth and slowdown in the United States, particularly in the U.S. equity and cryptocurrency markets, which stimulated and contracted growth in overall investment activity on our platform .

Macroeconomic Events and Conditions

Customer behavior is impacted by the overall macroeconomic environment, which is influenced by elements beyond our control, including economic and political conditions (such as the Russian invasion of Ukraine), inflation, tax rates, fluctuations in interest rates, the COVID-19 pandemic or the emergence of any similar public health threats, unemployment rates, and natural disasters. Additionally, macroeconomic conditions have an impact on asset values, which are an input into the transaction-based revenues we earn on equities and cryptocurrencies, and interest rates set by the U.S. Federal Reserve, which significantly impacts interest revenues. Finally, inflation can and will results in increased costs to operate our business, including potential increases in supplier costs,/ employee compensation and benefits expenses.

For more information about how market trends and macroeconomic events can adversely impact our results of operations, see "Risk Factors—Risks Related to Our Business."

Key Components of Our Results of Operations

Revenues

Transaction-Based Revenues

Transaction-based revenues consist of amounts earned from routing customer orders for options, cryptocurrencies, and equities to market makers. When customers place orders for options, cryptocurrencies, or equities on our platform, we route these orders to market makers and we receive consideration from those market makers. With respect to equities and options trading, such fees are known as PFOF. With respect to cryptocurrency trading, we receive “Transaction Rebates.” In the case of equities, the fees we receive are typically based on the size of the publicly quoted bid-ask spread for the security being traded; that is, we receive a fixed percentage of the difference between the publicly quoted bid and ask at the time the trade is executed. For options, our fee is on a per contract basis based on the underlying security. In the case of cryptocurrencies, our rebate is a fixed percentage of the notional order value. Within each asset class, whether equities, options or cryptocurrencies, the transaction-based revenue we earn is calculated in an identical manner among all participating market makers. We route equity and option orders in priority to participating market makers that we believe are most likely to give our customers the best execution, based on historical performance (according to order price, trading symbol, availability of the market maker and, if statistically significant, order size), and, in the case of options, the likelihood of the order being filled is a factor as well. For cryptocurrency orders, we route to market makers based on price and availability of the cryptocurrency from the market maker.

Net Interest Revenues

Net interest revenues consist of interest revenues less interest expenses. We earn interest revenues on margin loans to users, corporate cash and investments, segregated cash and cash equivalents, deposits with clearing organizations, and Cash Sweep. We also earn and incur interest revenues and expenses on securities lending transactions. We incur interest expenses in connection with our revolving credit facilities.

Other Revenues

Other revenues primarily consist of Robinhood Gold subscription fees, as well as proxy rebates, proxy revenues, and ACATS fees charged to users for facilitating the transfer of part or all of assets in their accounts to another broker-dealer.

Operating Expenses

Brokerage and Transaction

Brokerage and transaction costs primarily consist of broker-dealer transaction expenses (such as fees paid to centralized clearinghouses and regulatory fees), market data expenses, cash and share-based compensation and benefits as well as allocated overhead for employees engaged in clearing and brokerage functions, and Robinhood Cash Card transactions expenses (such as network fees and card processing fees). A large portion of our brokerage and transaction costs are variable and tied to trading and transaction volumes on our platform.

Technology and Development

Technology and development costs primarily consist of cash and share-based compensation and benefits as well as allocated overhead for engineering, data science, and design personnel who support and improve our platform and develop new products, costs for cloud infrastructure services, and costs associated with computer hardware and software, including amortization of internally developed software.

Operations

Operations costs consist of customer service related expenses, including cash and share-based compensation and benefits as well as allocated overhead for employees engaged in customer support, and costs incurred to support and improve customer experience (such as third-party customer service vendors).

Operations costs also include our provision for credit losses and fraud in connection with unrecoverable receivables due to Fraudulent Deposit Transactions and chargebacks for unauthorized debit card use. The provision for credit loss is equal to the unsecured receivable balance owed by users, i.e., the difference between the amount due from users and the fair value of the assets in the users' accounts. We seek to reduce Fraudulent Deposit Transactions and unauthorized debit card usage by deploying and iterating on machine learning models that identify high risk users and transactions on our platform. In addition, upon identifying high risk users and transactions, we seek to prevent further losses by introducing friction into the user experience (for example, by not offering the identified customer access to instant funds) or implementing restrictions to mitigate the risk of these transactions (such as temporarily restricting withdrawals). Due to the fraudulent nature of these transactions, recourse and collection of the funds is limited. The provision for credit losses also includes losses related to our margin lending and proxy rebate activities.

Marketing

Marketing costs primarily consist of cash and share-based compensation and benefits as well as allocated overhead for employees engaged in the marketing function. Marketing costs also include digital marketing, brand marketing, and creative services costs for creation, production, and placement of advertisements and marketing content, as well as marketing incentive expenses associated with the Robinhood Referral Program. Other marketing costs include cash credits we offer to customers, which primarily relate to remediation for losses experienced by our customers due to service interruptions on our platform and reimbursement of direct losses incurred by our customers from allegedly unauthorized account activity.

Under the Robinhood Referral Program, we credit referring and referred customers with a stock reward, with the potential value of each share ranging from $5 to $200. The 20 stocks that are available to choose from are selected by choosing the two largest S&P 500 companies, within the top 10 sectors, based on market cap. Referring customers can earn more than one reward through the Robinhood Referral Program, by making multiple referrals, subject to a maximum of $1,500 in total rewards earned annually per customer. From time to time, we offer multiple stock rewards per referral. In order for rewards to be earned by the referring and referred customer, the referred customer must fulfill certain conditions stated in their promotion, such as linking their bank accounts to our platform. After the referred Robinhood account is approved, each customer must claim their stock reward in the Robinhood app within 60 days of notification thereof, at which point the stock is deposited to such customer's Robinhood account. Customers do not provide any cash consideration for the stock reward.

General and Administrative

General and administrative costs primarily consist of cash and share-based compensation and benefits as well as allocated overhead for certain executives and employees engaged in legal, finance, human resources, risk, and compliance. General and administrative costs also include legal expenses, other professional fees, settlements and penalties, and business insurance.

Results of Operations

The following table summarizes our consolidated statements of operations data:

	Year Ended December 31,		
(in millions)	2020	2021	2022
Revenues:			
Transaction-based revenues	$ 720	$ 1,402	$ 814
Net interest revenues	177	256	424
Other revenues	61	157	120
Total net revenues	958	1,815	1,358
Operating expenses:(1)			
Brokerage and transaction	114	158	179
Technology and development	215	1,234	878
Operations	135	368	285
Marketing	186	325	103
General and administrative	295	1,371	924
Total operating expenses	945	3,456	2,369
Change in fair value of convertible notes and warrant liability	—	2,045	—
Other expense (income), net	—	(1)	16
Income (loss) before income taxes	13	(3,685)	(1,027)
Provision for income taxes	6	2	1
Net income (loss)	$ 7	$ (3,687)	$ (1,028)

(1) Includes share-based compensation expense as follows:

	Year Ended December 31,		
(in millions)	2020	2021	2022
Brokerage and transaction	$ —	$ 7	$ 5
Technology and development	18	610	212
Operations	—	20	8
Marketing	1	50	4
General and administrative	5	885	425
Total share-based compensation expense	$ 24	$ 1,572	$ 654

The 2020 amounts exclude the effect of share-based compensation for awards with performance-based conditions because our IPO had not occurred and, therefore, could not be considered probable. Upon our IPO in 2021, we recognized $1.01 billion of share-based compensation. For more information, see “Share-based compensation” in Note 1 - Description of Business and Summary of Significant Accounting Policies, to our consolidated financial statements in this Annual Report.

Comparison of the Years Ended December 31, 2022 and 2021

A discussion of our results for fiscal year 2021 compared to fiscal year 2020 can be found in "Management's Discussion and Analysis of Financial Condition and Results of Operations — Comparison of the Years Ended December 31, 2020 and 2021" in Part II, Item 7 of our Annual Report on Form 10-K for the year ended December 31, 2021, filed with the SEC on February 24, 2022.

Revenues

Transaction-Based Revenues

	Year Ended December 31,				
(in millions, except for percentages)	2020	2021	2022	2020 to 2021 % Change	2021 to 2022 % Change
Transaction-based revenues					
Options	$ 440	$ 690	$ 488	57 %	(29)%
Cryptocurrencies	27	420	202	NM	(52)%
Equities	251	287	117	14 %	(59)%
Other	2	5	7	150 %	40 %
Total transaction-based revenues	$ 720	$ 1,402	$ 814	95 %	(42)%
Percentage of total net revenues:					
Options	46%	38%	36%		
Cryptocurrencies	3%	23%	15%		
Equities	26%	16%	9%		
Other	—%	—%	—%		
Total transaction-based revenues	75 %	77%	60%		

Transaction-based revenues decreased by $588 million primarily driven by the market environment which had a negative impact on the number of traders and Notional Trading Volumes in all asset classes.

Options DARTs decreased from 0.8 million to 0.6 million. Additionally, the number of users placing option trades decreased 42% while the average number of options contracts traded per trader was up 33%.

Crypto DARTs decreased from 1.2 million to 0.3 million. Additionally, the number of users placing cryptocurrency trades decreased 61% and the average Notional Trading Volume traded per trader decreased 43%. The decrease was partially offset by a higher rebate rate from crypto market makers (initial increase was effective in late December 2021 and a further increase was effective in May 2022).

Equities DARTs decreased from 3.1 million to 1.6 million. Additionally, the number of users placing equity trades decreased 47% and the average Notional Trading Volume traded per trader decreased 5%.

Net Interest Revenues

(in millions, except for percentages)	Year Ended December 31, 2020	2021	2022	2020 to 2021 % Change	2021 to 2022 % Change
Net interest revenues:					
Margin interest	$ 67	$ 132	$ 177	97 %	34 %
Interest on corporate cash and investments	2	1	103	(50)%	NM
Securities lending, net	98	136	89	39 %	(35)%
Interest on segregated cash and cash equivalents and deposits	14	4	57	(71)%	NM
Cash Sweep, net	1	3	22	200 %	633 %
Interest expenses related to credit facilities	(5)	(20)	(24)	300 %	20 %
Total net interest revenues	$ 177	$ 256	$ 424	45 %	66 %
Percentage of total net revenues:					
Margin interest	7%	7%	13%		
Interest on corporate cash and investments	—%	—%	7%		
Securities lending, net	10%	7%	7%		
Interest on segregated cash and cash equivalents and deposits	2%	1%	4%		
Cash Sweep, net	—%	—%	2%		
Interest expenses related to credit facilities	—%	(1)%	(2)%		
Total net interest revenues	19%	14%	31%		

Net interest revenues increased by $168 million primarily due to higher interest revenues earned from corporate cash and investments, segregated cash and cash equivalents and deposits, margin interest, and Cash Sweep, partially offset by lower interest revenues earned through securities lending.

Increased net interest revenues were driven by the higher interest rate environment due to the rise in the federal funds rate, which is an input to our floating margin rate calculation and impacts the interest rate we receive on investable assets. Net interest revenues earned from investments and corporate cash, segregated cash and cash equivalents and deposits increased by $102 million and $53 million. Interest revenues from margin interest also increased by $45 million due to the higher rate while our Margin Book balance declined year-over-year. These increases were partially offset by a $47 million decrease in net interest revenues earned from securities lending transactions due to lower demand for hard-to-borrow securities.

The following table summarizes interest-earnings assets, the revenue or expense generated by these assets, and their respective annualized yields (computed based on average balance over the quarter):

(in millions, except for annual yield)	Margin Book[(1)]	Cash and deposits[(2)]	Cash Sweep (off-balance sheet)[(3)]	**Total interest-earning assets**	Securities lending, net	Interest expenses related to credit facilities	**Net interest revenue**
Year ended December 31, 2022							
December 31, 2022	$ 3,089	$ 9,530	$ 5,837	**$ 18,456**			
December 31, 2021	6,467	10,600	2,095	**19,162**			
Average[(4)]	4,778	10,065	3,966	**18,809**			
Revenue/(expense)	$ 177	$ 160	$ 22	**$ 359**	$ 89	$ (24)	**$ 424**
Annual yield[(5)]	3.70 %	1.59 %	0.55 %	**1.91 %**			**2.25 %**
Year ended December 31, 2021							
December 31, 2021	$ 6,467	$ 10,600	$ 2,095	**$ 19,162**			
December 31, 2020	3,351	6,544	1,827	**11,722**			
Average[(4)]	4,909	8,572	1,961	**15,442**			
Revenue/(expense)	$ 132	$ 5	$ 3	**$ 140**	$ 136	$ (20)	**$ 256**
Annual yield[(5)]	2.69 %	0.06 %	0.15 %	**0.91 %**			**1.66 %**
Year ended December 31, 2020							
December 31, 2020	$ 3,351	$ 6,544	$ 1,827	**$ 11,722**			
December 31, 2019	642	3,186	59	**3,887**			
Average[(4)]	1,997	4,865	943	**7,805**			
Revenue/(expense)	$ 67	$ 16	$ 1	**$ 84**	$ 98	$ (5)	**$ 177**
Annual yield[(5)]	3.36 %	0.33 %	0.11 %	**1.08 %**			**2.27 %**

(1) Margin Book is the aggregate outstanding margin loan balances receivable.

(2) Includes cash and cash equivalents, cash segregated under federal and other regulations, deposits with clearing organizations and investments.

(3) Cash Sweep is an off-balance-sheet amount. Robinhood earns a net interest spread on Cash Sweep balances based on the interest rate offered by the partner banks less the interest rate given to users as stated in our program terms.

(4) Average balance rows present a simple average of the ending balances as of each of the indicated dates for the relevant period.

(5) Annual yield is calculated by annualizing revenue/expense for the given period then dividing by the applicable average asset balance.

Other Revenues

(in millions, except for percentages)	Year Ended December 31, 2020	2021	2022	2020 to 2021 % Change	2021 to 2022 % Change
Other revenues	$ 61	$ 157	$ 120	157 %	(24)%
Percentage of total net revenues	6 %	9 %	9 %		

Other revenues decreased by $37 million compared to the prior year, mainly driven by the decreases in ACATS fees and subscription fees as a result of a decrease in paid subscribers to Robinhood Gold from 1.3 million to 1.1 million.

Operating Expenses

(in millions, except for percentages)	Year Ended December 31, 2020	2021	2022	2020 to 2021 % Change	2021 to 2022 % Change
Operating expenses:					
Brokerage and transaction	$ 114	$ 158	$ 179	39 %	13 %
Technology and development	215	1,234	878	474 %	(29)%
Operations	135	368	285	173 %	(23)%
Marketing	186	325	103	75 %	(68)%
General and administrative	295	1,371	924	365 %	(33)%
Total operating expenses	$ 945	$ 3,456	$ 2,369		
Percent of total net revenues:					
Brokerage and transaction	12 %	9 %	13 %		
Technology and development	22 %	68 %	65 %		
Operations	14 %	20 %	21 %		
Marketing	19 %	18 %	8 %		
General and administrative	31 %	76 %	68 %		
Total operating expenses	98 %	191 %	175 %		

Brokerage and Transaction

(in millions)	Year Ended December 31, 2020	2021	2022	2020 to 2021 % Change	2021 to 2022 % Change
Q4 2022 Processing Error	$ —	$ —	$ 57	NM	NM
Broker-dealer transaction expenses	55	48	31	(13)%	(35)%
Market data expenses	21	33	26	57%	(21)%
Employee compensation, benefits, and overhead, excluding share-based compensation	7	14	20	100%	43 %
Robinhood Cash Card transaction expenses	4	12	9	200%	(25)%
Share-based compensation	—	7	5	NM	(29)%
Other	27	44	31	63%	(30)%
Total	$ 114	$ 158	$ 179	39%	13 %

Brokerage and transaction costs increased by $21 million primarily due to the $57 million Q4 2022 Processing Error, offset by a $17 million decrease in broker-dealer transaction expenses primarily driven by lower trading volume and a reduction of certain of these expenses effective in June 2021, and a $13 million decrease in other brokerage and transaction costs primarily due to lower bank charges as a result of more favorable pricing from our banking counterparties.

Technology and Development

(in millions)	Year Ended December 31, 2020	2021	2022	2020 to 2021 % Change	2021 to 2022 % Change
Employee compensation, benefits, and overhead, excluding share-based compensation	$ 104	$ 284	$ 367	173%	29 %
Share-based compensation	18	610	212	NM	(65)%
Cloud infrastructure services	67	267	175	299%	(34)%
Software and tools	22	63	105	186%	67 %
Other	4	10	19	150%	90 %
Total	$ 215	$ 1,234	$ 878	474%	(29)%

Technology and development costs decreased by $356 million primarily due to a decrease in share-based compensation expense of $398 million as higher share-based compensation expenses were recognized as a result of our IPO in July 2021. The April 2022 Restructuring and August 2022 Restructuring resulted in net reductions of $38 million in share-based compensation expense. Additionally, we experienced lower costs in cloud infrastructure services of $92 million primarily due to cost optimization efforts focusing on improvements in utilization of cloud infrastructure and lower overall activity.

These decreases were offset by an increase of employee compensation, benefits, and overhead of $83 million as our engineering and data science average headcount increased in the first half of the 2022 compared to 2021 to continue to support our platform and develop new products. These expenses also included $18 million due to severance expenses related to the April 2022 Restructuring and August 2022 Restructuring. Finally, we incurred an increase of $42 million in software and tools primarily driven by amortization of internally developed software and other software services utilized in delivering our products.

Operations

(in millions)	Year Ended December 31, 2020	2021	2022	2020 to 2021 % Change	2021 to 2022 % Change
Employee compensation, benefits, and overhead, excluding share-based compensation	$ 36	$ 125	$ 144	247%	15 %
Customer experience	28	98	78	250%	(20)%
Provision for credit losses and fraud	61	108	42	77%	(61)%
Share-based compensation	—	20	8	NM	(60)%
Other	10	17	13	70%	(24)%
Total	$ 135	$ 368	$ 285	173%	(23)%

Operations costs decreased by $83 million primarily due to a decrease in our provision for credit losses and fraud losses of $66 million as a result of decreased user transactions and our strengthened process to identify high risk users and prevent Fraudulent Deposit Transactions and unauthorized debit card use. Additionally, we experienced a decrease in customer experience costs of $20 million, primarily due to decrease in costs related to third-party customer support vendors as we consolidated our third-party customer support centers due to the overall decrease in user transactions. Furthermore, we experienced a decrease in share-based compensation expense of $12 million as higher share-based compensation expenses were recognized as a result of our IPO in July 2021.

These decreases were offset by an increase in employee compensation, benefits, and overhead of $19 million, primarily due to $12 million severance expenses related to the April 2022 Restructuring and August 2022 Restructuring.

Marketing

(in millions)	Year Ended December 31, 2020	2021	2022	2020 to 2021 % Change	2021 to 2022 % Change
Employee compensation, benefits, and overhead, excluding share-based compensation	$ 8	$ 37	$ 26	363%	(30)%
Digital marketing	36	49	21	36%	(57)%
Creative services	12	23	14	92%	(39)%
Brand marketing	29	24	14	(17)%	(42)%
Marketing incentives	81	121	11	49%	(91)%
Share-based compensation	—	50	4	NM	(92)%
Other marketing	20	21	13	5%	(38)%
Total	$ 186	$ 325	$ 103	75%	(68)%

Marketing costs decreased by $222 million partially due to a decrease in marketing incentives of $110 million, substantially all of which was due to lower costs associated with the Robinhood Referral Program, which was in line with the slower growth in our user base.

The expense recognized related to the Robinhood Referral Program is comprised of the fair value of awards earned in the current period, changes in estimate of unclaimed awards earned in the current and prior periods, fair value adjustments of shares held to support the program, and reversals related to awards that expire unclaimed. The fair value adjustments of shares held to support the program were immaterial for the periods presented. The following table summarizes the Robinhood Referral Program liability activity for the periods indicated:

(in millions)	Years ended December 31, 2020	2021	2022
Beginning balance, January 1	$ —	$ 1	$ —
Fair value of current period awards	86	127	14
Changes in estimate of unclaimed awards for current and prior periods	1	—	—
Reversals related to unclaimed, expired awards	(8)	(10)	(4)
Claimed awards	(78)	(118)	(10)
Ending balance, December 31	$ 1	$ —	$ —

Additionally, share-based compensation expense decreased by $46 million as higher share-based compensation expenses were recognized as a result of our IPO in July 2021. Digital marketing, brand marketing, and creative services decreased by $28 million, $10 million and $9 million, respectively. We invested significantly in marketing costs to raise brand awareness in 2021, which were reduced as our brand became more well established.

General and Administrative

(in millions)	Year Ended December 31, 2020	2021	2022	2020 to 2021 % Change	2021 to 2022 % Change
Share-based compensation	$ 5	$ 885	$ 425	NM	(52)%
Employee compensation, benefits, and overhead, excluding share-based compensation	79	196	239	148%	22 %
Legal expenses	56	101	76	80%	(25)%
Other professional fees	30	54	53	80%	(2)%
Impairment	—	—	45	NM	NM
Business insurance	4	25	41	525%	64 %
Settlements and penalties	106	70	24	(34)%	(66)%
Other	15	40	21	167%	(48)%
Total	$ 295	$ 1,371	$ 924	365%	(33)%

General and administrative costs decreased by $447 million primarily due to decreases in share-based compensation of $460 million as higher share-based compensation expenses were recognized as a result of our IPO in July 2021, including $323 million related to executive compensation arrangements (see Note 13 - Common Stock and Stockholders' (Deficit) Equity, to our consolidated financial statements in this Annual Report for further information). The April 2022 Restructuring and August 2022 Restructuring resulted in net reductions of $34 million in share-based compensation expense. We also experienced a decrease of $46 million in costs associated with settlements and penalties (see Note 17 - Commitments & Contingencies, to our consolidated financial statements in this Annual Report for further information) and $25 million in legal expenses.

These decreases were partially offset by impairment of $45 million related to the August 2022 Restructuring (see Note 6 - Restructuring Activities, to our consolidated financial statements in this Annual Report for further information). Employee compensation, benefits, and overhead also increased by $43 million, as our general and administrative personnel average headcount increased in the first half of the 2022 compared to 2021 to continue to support our business. This expense included $15 million of severance expenses related to the April 2022 Restructuring and August 2022 Restructuring.

Change in Fair Value of Convertible Notes and Warrant Liability

	Year Ended December 31,				
(in millions)	2020	2021	2022	2020 to 2021 % Change	2021 to 2022 % Change
Change in fair value of convertible notes and warrant liability	—	2,045	$ —	NM	NM

Change in fair value of convertible notes and warrant liability was due to the mark-to-market adjustment of the convertible notes and warrants we issued in February 2021. Upon completion of our IPO, the aggregate outstanding principal and accrued interest of the convertible notes converted into Class A common stock and the warrants became equity-classified, which resulted in the warrant liability being reclassified to additional paid-in capital. There will be no additional mark-to-market adjustments related to the convertible notes or warrant liability. See Note 8 - Investments and Fair Value Measurement, to our consolidated financial statements in this Annual Report for further information.

Provision for Income Taxes

	Year Ended December 31,				
(in millions)	2020	2021	2022	2020 to 2021 % Change	2021 to 2022 % Change
Provision for income taxes	$ 6	$ 2	1	(67)%	(50)%

Provision for income taxes decreased by $1 million primarily due to a favorable provision to return true up adjustment in certain tax jurisdictions upon the completion of our 2021 U.S. income tax returns, and offset by the change in valuation allowance on our remaining U.S. federal and state deferred tax assets and by our current state taxes payable.

Liquidity and Capital Resources

Sources and Uses of Funds

Our principal sources of liquidity are cash flows generated from operations, and our cash, cash equivalents, and investments. Other sources of future funds may include potential borrowing capacity under our revolving lines of credit and potential issuance of new debt or equity. Our liquidity needs are primarily to support and invest in our core business, including investing in new ways to serve our customers, potentially seeking strategic acquisitions to leverage existing capabilities and further build our business, and for general capital needs (including capital requirements imposed by regulators and SROs and cash deposit and collateral requirements under the rules of the DTC, NSCC, and OCC). Based on our current level of operations, we believe our primary sources of liquidity will be adequate to meet our current liquidity needs for the next 12 months.

Cash, Cash Equivalents, and Investments

Our cash, cash equivalents, and investments were $6.25 billion and $6.34 billion as of December 31, 2021 and 2022. Our investment portfolio comprises highly liquid available-for-sale securities, including asset-backed securities, commercial paper, corporate bonds, and government bonds.

Revolving Lines of Credit

As of December 31, 2022, we had a total of $2.91 billion in committed revolving lines of credit. See Note 12 - Financing Activities and Off-Balance Sheet Risk, to our consolidated financial statements in this Annual Report for further information.

Commitments

The following table summarizes our short- and long-term material cash requirements for contractual obligations as of December 31, 2022:

	Payments Due by Period				
(in millions)	Total	2023	2024-2025	2026-2027	Thereafter
Operating lease commitments	$ 190	$ 30	$ 56	$ 36	$ 68
Non-cancelable purchase commitments(1)	1,037	309	490	238	—
Total	$ 1,227	$ 339	$ 546	$ 274	$ 68

(1) Non-cancelable purchase commitments are determined based on the non-cancelable quantities or termination amounts to which we are contractually obligated. They primarily relate to commitments for cloud infrastructure service and business insurance.

In addition to lease and purchase commitments, we have a committed financing agreement with a contractual term of 30 days and a daily minimum commitment of $25 million and another with a contractual term of 21 days with a daily minimum commitment of $35 million. See "Securities Borrowing and Lending" in Note 1 - Description of Business and Summary of Significant Accounting Policies, to our consolidated financial statements in this Annual Report for further information.

Regulatory Capital Requirements

Our broker-dealer subsidiaries (RHF and RHS) are subject to the SEC Uniform Net Capital Rule, administered by the SEC and FINRA, which requires the maintenance of minimum net capital, as defined. Net capital and the related net capital requirements may fluctuate on a daily basis. RHS and RHF compute net capital under the alternative method as permitted by the SEC Uniform Net Capital Rule.

The tables below summarize the net capital, capital requirements and excess net capital of RHS and RHF as of periods presented:

	December 31, 2022		
(in millions)	Net Capital	Required Net Capital	Net Capital in Excess of Required Net Capital
RHS	$ 2,503	$ 66	$ 2,437
RHF	231	0.25	231

Cash Flows

The following table summarizes our cash flow activities:

	Year Ended December 31,		
(in millions)	2020	2021	2022
Cash provided by (used in):			
Operating activities	$ 1,876	$ (885)	$ (852)
Investing activities	(32)	(238)	(60)
Financing activities	1,276	5,203	—

Cash used in operating activities decreased $33 million. The decrease consisted of net loss adjusted for certain non-cash items and the effect of changes in operating assets and liabilities. Cash used in operating activities resulting from net loss adjusted for certain non-cash items increased by $230 million. This was primarily due to lower net loss partially offset by the effect of non-cash items adjustments that provided cash and only occurred in 2021 such as the mark-to-market adjustment of convertible notes and warrants of $2.05 billion and the cumulative one-time SBC expense recognized upon our IPO of $1.57 billion as compared to the SBC expense in 2022 of $654 million. Adjustments for non-cash items in 2022 also included a $45 million impairment of long-lived assets related to the August 2022 Restructuring. Cash used in operating activities resulting from changes in operating assets and liabilities decreased $263 million. The decrease was primarily driven by a decrease in receivables from users, net of $6.75 billion, partially offset by an increase of $2.35 billion for payable to users, net, an increase of $3.55 billion for securities loaned, and an increase of $517 million in securities borrowed. Net operating assets and liabilities at any specific point in time are subject to many variables, including variability in user activity, the timing of cash receipts and payments, and vendor payment terms.

Cash used in investing activities decreased $178 million in 2022 compared to 2021, which was primarily driven by $125 million used in business acquisitions, net of cash acquired in 2021, and to a lesser extent a reduction in expenditures related to the purchases of property and equipment and the capitalization of internally developed software. Cash used in investing activities in 2022 was partially offset by cash provided by investing activities of $42 million resulting from sale of investments.

We did not have any cash flows from financing activities in 2022 compared to cash flows provided by financing activities of $5.20 billion in 2021, which was primarily driven by the issuance of convertible notes and warrants totaling $3.55 billion as well as proceeds from issuance of common stock in connection with our IPO, net of offering costs totaling $2.05 billion.

Critical Accounting Estimates

The preparation of financial statements in conformity with generally accepted accounting principles in the United States (“GAAP”) requires estimates and assumptions that affect the reported amounts of assets and liabilities, revenues and expenses, and related disclosures of contingent liabilities in the consolidated financial statements and accompanying notes. The SEC has defined a company’s critical accounting policies as the ones that are most important to the portrayal of the company’s financial condition and results of operations, and which require the company to make its most difficult and subjective judgments, often as a result of the need to make estimates of matters that are inherently uncertain. Based on this definition, we have identified the critical accounting estimates addressed below. We also have other key accounting policies, which involve the use of estimates, judgments, and assumptions that are significant to understanding our results. For additional information, see Note 1 - Description of Business and Summary of Significant Accounting Policies, to our consolidated financial statements in this Annual Report. Although we believe that our estimates, assumptions, and judgments are reasonable, they are based upon information presently available. Actual results might differ significantly from these estimates under different assumptions, judgments, or conditions.

Business Combinations

We allocate the fair value of purchase price to the tangible assets acquired, liabilities assumed, and intangible assets acquired based on their estimated fair values. The excess of the fair value of purchase price over the fair values of these identifiable assets and liabilities is recorded as goodwill. Such valuations require management to make significant estimates and assumptions, especially with respect to intangible assets. Significant estimates in valuing certain intangible assets include, but are not limited to, future expected cash flows from acquired customer contracts, acquired technology, and trade names, based on expected future growth rates and margins, attrition rates, future changes in technology and royalty for similar brand licenses, useful lives, and discount rates. Management's estimates of fair value are based upon assumptions believed to be reasonable, but which are inherently uncertain and unpredictable and, as a result, actual results might differ from estimates.

Goodwill

Goodwill represents the excess of the purchase price over the fair value of net assets acquired in a business combination and is allocated to reporting units expected to benefit from the business combination. We operate and report financial information in one operating segment. We test goodwill for impairment at least annually, in the fourth quarter, or whenever events or changes in circumstances indicate that goodwill might be impaired. We evaluate our reporting units when changes in our operating structure occur, and if necessary, reassign goodwill using a relative fair value allocation approach. In testing for goodwill impairment, we first assess qualitative factors to determine whether the existence of events or circumstances leads to a determination that it is more likely than not that the fair value of a reporting unit is less than its carrying amount. If, after assessing the totality of events or circumstances, we determine it is not more likely than not that the fair value of a reporting unit is less than its carrying amount, then additional impairment testing is not required. However, if we conclude otherwise, we proceed to a quantitative assessment.

The quantitative assessment compares the estimated fair value of a reporting unit to its book value, including goodwill. If the fair value exceeds book value, goodwill is considered not to be impaired and no additional steps are necessary. However, if the book value of a reporting unit exceeds its fair value, an impairment loss will be recognized in an amount equal to that excess, limited to the total amount of goodwill allocated to that reporting unit.

Income Tax

We make significant judgments and estimates to determine any valuation allowance recorded against deferred tax assets. Deferred tax assets are evaluated for future realization and reduced by a valuation allowance to the extent we believe that they will not be realized. We consider many factors when assessing the likelihood of future realization of our deferred tax assets including, but not limited to, historical cumulative loss experience and expectations of future earnings, tax planning strategies, and the carry-forward periods available for tax reporting purposes. Our judgment regarding future profitability may change due to many factors, including future market conditions and the ability to successfully execute business plans and/or tax planning strategies. Should there be a change in the ability to recover deferred tax assets, our tax provision would increase or decrease in the period in which the assessment is changed.

We recognize a tax benefit from an uncertain tax position when it is more likely than not that the position will be sustained upon examination, including resolutions of any related appeals or litigation, based on the technical merits. Income tax positions must meet a more-likely-than-not recognition threshold at the effective date to be recognized. We account for uncertain tax positions, including net interest and penalties, as a component of income tax expense or benefit. We make adjustments to these uncertain tax positions in accordance with applicable income tax guidance and based on changes in facts and circumstances. To the extent that the final tax outcome of these matters is different from the amounts recorded, such differences will affect the provision for income taxes in the period in which such determination is made and could have a material impact to our consolidated financial statements and operating results.

Share-based Compensation

Time-Based RSUs

We have granted RSUs that vest upon the satisfaction of a time-based service condition ("Time-Based RSUs"). Prior to our IPO, our Time-Based RSUs vested based upon the satisfaction of both a time-based service condition and a performance-based condition, namely the occurrence of a liquidity event such as the IPO. The fair value of our RSUs is estimated based on the fair value of our common stock on the date of grant. The time-based service condition for our awards is generally satisfied over four years. For Time-Based RSUs granted pre-IPO, we record share-based compensation expense on an accelerated attribution method over the requisite service period, as these awards include a performance-based vesting condition. The performance-based condition for our pre-IPO grants was satisfied upon the occurrence of the IPO in 2021, at which point we recorded a cumulative one-time share-based compensation expense determined using the awards' grant-date fair value. No performance-based conditions exist for our post-IPO grants, and therefore for grants of Time-Based RSUs issued post-IPO, we record share-based compensation expense on a straight line basis over the requisite service period.

Market-Based RSUs

We have granted RSUs that vest upon the satisfaction of all the following conditions: time-based service conditions, performance-based conditions, and market-based conditions. The time-based service condition for these awards generally is satisfied over six years. The performance-based conditions are satisfied upon the occurrence of an IPO. The market-based conditions are satisfied upon our achievement of specified share prices.

For market-based awards, we determine the grant-date fair value utilizing a Monte Carlo valuation model, which incorporates various assumptions including expected stock price volatility, expected term, risk-free interest rates, expected date of an IPO, and expected capital raise percentage. We estimate the expected term based on various vesting scenarios, as these awards are not considered "plain vanilla." We estimate the expected date of an IPO based on our expectation at the time of measurement of the award's value.

We record share-based compensation expense for market-based equity awards on an accelerated attribution method over the requisite service period, and only if performance-based conditions are considered probable to be satisfied. We determine the requisite service period by comparing the derived service period to achieve the market-based condition and the explicit time-based service period, using the longer of the two service periods as the requisite service period. Upon the occurrence of our IPO in 2021, we recorded a cumulative one-time share-based compensation expense determined using the grant-date fair values. Share-based compensation related to remaining time-based service and market-based conditions to be met will be recorded over the remaining derived requisite service period.

Common Stock Valuations

Prior to our IPO, given the absence of a public trading market for our common stock and in accordance with the American Institute of Certified Public Accountants Accounting and Valuation Guide, Valuation of Privately-Held Company Equity Securities Issued as Compensation, our board of directors exercised reasonable judgment and considered numerous objective and subjective factors to determine the best estimate of fair value of our common stock.

These factors included:

- independent third-party valuations of our common stock;
- the prices paid for common or convertible preferred stock sold to third-party investors by us and prices paid in secondary transactions, including any tender offers;
- the rights, preferences and privileges of our redeemable convertible preferred stock relative to those of our common stock;
- our financial condition, results of operations, and capital resources;
- the industry outlook;
- the valuation of comparable companies;
- the lack of marketability of our common stock;
- the likelihood of achieving a liquidity event, such as an IPO or a sale of our company, given prevailing market conditions;
- the history and nature of our business, industry trends, and competitive environment; and
- general economic outlook including economic growth, inflation, unemployment, interest rate environment, and global economic trends.

Our board of directors determined the fair value of our common stock by first determining the enterprise value of our business, and then allocating the value among the various classes of our equity securities to derive a per share value of our common stock. The enterprise value of our business was primarily estimated by reference to the closest round of equity financing or tender transaction preceding the date of the valuation. In a few cases, we also utilized the income or market approaches.

The income approach estimates enterprise value based on the estimated present value of future cash flows the business is expected to generate over its remaining life. The estimated present value is calculated using a discount rate reflective of the risks associated with an investment in a similar company in a similar industry or having a similar history of revenue growth. The market approach estimates value based on a comparison of the subject company to comparable public companies. From the comparable companies, a representative market value multiple is determined and then applied to the subject company's financial forecasts to estimate the value of the subject company.

In allocating the enterprise value of our business among the various classes of stock prior, we primarily used the option pricing method ("OPM"), which models each class of stock as a call option with a unique claim on our assets. After the allocation to the various classes of stock, a discount for lack of marketability ("DLOM"), is applied to arrive at a fair value of the common stock. A DLOM is meant to account for the lack of marketability of a stock that is not traded on public exchanges.

In addition, we also considered any secondary transactions involving our capital stock. In our evaluation of those transactions, we considered the facts and circumstances of each transaction to determine the extent to which they represented a fair value exchange and assigned the transactions an appropriate weighting in the valuation of our common stock. Factors considered include the number of different buyers and sellers, transaction volume, timing relative to the valuation date, whether the transactions occurred between willing and unrelated parties, and whether the transactions involved investors with access to our financial information.

Application of these approaches involves the use of estimates, judgments, and assumptions that are highly complex and subjective, such as those regarding our expected future revenue, expenses and future cash flows, discount rates, market multiples, the selection of comparable companies, and the probability of possible future events. Changes in any or all of these estimates and assumptions or the relationships between those assumptions impact our valuations as of each valuation date and may have a material impact on the valuation of our common stock.

Following the completion of our IPO, there is an active market for our Class A common stock, so we no longer apply these valuation approaches.

Recent Accounting Pronouncements

See Note 2 - Recent Accounting Pronouncements, to our consolidated financial statements in this Annual Report.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Market risk generally represents the risk of loss that may result from the potential change in the value of a financial instrument as a result of fluctuations in interest rates and market prices. Information relating to quantitative and qualitative disclosures about these market risks is described below.

Interest Rate Risk

Our exposure to changes in interest rates primarily relates to interest earned on our cash and cash equivalents, cash and cash equivalents segregated under federal and other regulations, deposits with clearing organizations, restricted cash, investments in debt securities and margin loans. We use a net interest sensitivity analysis to evaluate the effect that changes in interest rates might have on total net revenues. The results of the analysis based on our financial position as of December 31, 2022 indicate that a hypothetical 100 basis point increase or decrease in interest rates would have had a positively correlated impact of approximately 10% on total net revenues.

We also have exposure to change in interest rates related to our variable-rate credit facilities, which are described in Note 12 - Financing Activities and Off-Balance Sheet Risk, to our consolidated financial statements in this Annual Report. However, as there were no outstanding borrowings under our credit facilities as of December 31, 2022 and 2021, we had limited financial exposure associated with changes in interest rates as of such dates.

Our measurement of interest rate risk involves assumptions that are inherently uncertain and, as a result, our analysis might not precisely estimate the actual impact of changes in interest rates on net interest revenues. Actual results may differ from simulated results due to balance growth or decline and the timing, magnitude, and frequency of interest rate changes, as well as changes in market conditions and management strategies, including changes in asset and liability mix.

Market-Related Credit Risk

We are indirectly exposed to equity securities risk in connection with securities collateralizing margin receivables, as well as risk related to our securities lending activities. We manage risk on margin and securities-based lending by requiring customers to maintain collateral in compliance with internal and, as applicable, regulatory guidelines. We monitor required margin levels daily and require our customers to deposit additional collateral, or to reduce positions, when necessary. We continuously monitor customer accounts to detect excessive concentration, large orders or positions, and other activities that indicate increased risk to us. We manage risks associated with our securities lending activities by requiring credit approvals for counterparties, by monitoring the market value of securities loaned and collateral values for securities borrowed on a daily basis, by requiring additional cash as collateral for securities loaned or return of collateral for securities borrowed when necessary, and by participating in a risk-sharing program offered through the OCC.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

INDEX TO THE CONSOLIDATED FINANCIAL STATEMENTS

Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors of Robinhood Markets, Inc.

Opinion on Internal Control Over Financial Reporting

We have audited Robinhood Markets, Inc.'s internal control over financial reporting as of December 31, 2022, based on criteria established in Internal Control – Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2022, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets as of December 31, 2022 and 2021, the related consolidated statements of operations, comprehensive income (loss), cash flows, and mezzanine equity and stockholders' (deficit) equity for each of the three years in the period ended December 31, 2022, and the related notes and our report dated February 27, 2023 expressed an unqualified opinion thereon.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying report of management on internal control of financial reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ Ernst & Young LLP

San Jose, California
February 27, 2023

Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors of Robinhood Markets, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Robinhood Markets, Inc. (the Company) as of December 31, 2022 and 2021, the related consolidated statements of operations, comprehensive income (loss), cash flows, and mezzanine equity and stockholders' (deficit) equity for each of the three years in the period ended December 31, 2022, and the related notes (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2022 and 2021, and the results of its operations and its cash flows for three years in the period ended December 31, 2022 in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2022, based on criteria established in Internal Control – Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) and our report dated February 27, 2023 expressed an unqualified opinion thereon.

Adoption of SAB 121

As discussed in Note 2 to the consolidated financial statements, the Company changed its method of accounting for obligations to safeguard crypto-assets held in custody on behalf of its platform users in 2022 due to the adoption of SAB 121.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current period audit of the financial statements that was communicated or required to be communicated to the audit committee and that: (1) relates to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective or complex judgments. The communication of the critical audit matter does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Description of the Matter	***Transaction-based revenues***
	As discussed in Note 1 and Note 5 to the consolidated financial statements, the Company recognized transaction-based revenues of $814 million for the year ended December 31, 2022, of which $807 million is comprised of revenues earned from routing user orders to market makers when the performance obligation is satisfied, which is at the point in time when a routed order is executed by the market maker. The Company's transaction-based revenues from routing user orders involves a significant volume of transactions and is earned from various market makers and is sourced from multiple systems across the Company's information technology environment. Auditing transaction-based revenues from routing user orders was complex and involved significant audit effort to identify, test, and evaluate the Company's relevant systems used to process and record transaction-based revenues from routing user orders.
How We Addressed the Matter in Our Audit	We obtained an understanding, evaluated the design and tested the operating effectiveness of controls over the revenue recognition process for transaction-based revenues from routing user orders. With the involvement of our information technology professionals, we identified and tested the relevant systems used to process and record transaction-based revenues earned from routing user orders, and tested the relevant information technology general controls over those systems. Our audit procedures included, among others, testing on a sample basis the completeness and accuracy of the underlying data and calculations used to record transaction-based revenues from routing user orders, obtaining external confirmation of revenue recognized and transaction price from market makers, and comparing revenue recognized to cash receipts.

/s/ Ernst & Young LLP

We have served as the Company's auditor since 2017.

San Jose, California

February 27, 2023

ROBINHOOD MARKETS, INC.
CONSOLIDATED BALANCE SHEETS

(in millions, except share and per share data)	December 31, 2021	December 31, 2022
Assets		
Current assets:		
Cash and cash equivalents	$ 6,253	$ 6,339
Cash segregated under federal and other regulations	3,992	2,995
Receivables from brokers, dealers, and clearing organizations	88	76
Receivables from users, net	6,639	3,218
Securities borrowed	—	517
Deposits with clearing organizations	328	186
Asset related to user cryptocurrencies safeguarding obligation	—	8,431
User-held fractional shares	1,834	997
Prepaid expenses	92	86
Other current assets	57	72
Total current assets	19,283	22,917
Property, software, and equipment, net	146	146
Goodwill	101	100
Intangible assets, net	34	25
Non-current prepaid expenses	44	17
Other non-current assets	161	132
Total assets	$ 19,769	$ 23,337
Liabilities and stockholders' equity		
Current liabilities:		
Accounts payable and accrued expenses	$ 252	$ 185
Payables to users	6,476	4,701
Securities loaned	3,651	1,834
User cryptocurrencies safeguarding obligation	—	8,431
Fractional shares repurchase obligation	1,834	997
Other current liabilities	134	105
Total current liabilities	12,347	16,253
Other non-current liabilities	129	128
Total liabilities	12,476	16,381
Commitments and contingencies (Note 17)		
Stockholders' equity:		
Class A common stock, $0.0001 par value. 21,000,000,000 shares authorized, 735,957,367 shares issued and outstanding as of December 31, 2021; 21,000,000,000 shares authorized, 764,888,917 shares issued and outstanding as of December 31, 2022.	—	—
Class B common stock, par value $0.0001. 700,000,000 shares authorized, 127,955,246 shares issued and outstanding as of December 31, 2021; 700,000,000 shares authorized, 127,862,654 shares issued and outstanding as of December 31, 2022.	—	—
Class C common stock, par value $0.0001. 7,000,000,000 shares authorized, no shares issued and outstanding as of December 31, 2021 and 2022.	—	—
Additional paid-in capital	11,169	11,861
Accumulated other comprehensive income (loss)	1	—
Accumulated deficit	(3,877)	(4,905)
Total stockholders' equity	7,293	6,956
Total liabilities and stockholders' equity	$ 19,769	$ 23,337

See Accompanying Notes to the Consolidated Financial Statements.

ROBINHOOD MARKETS, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS

(in millions, except share and per share data)	Year Ended December 31, 2020	2021	2022
Revenues:			
Transaction-based revenues	$ 720	$ 1,402	$ 814
Net interest revenues	177	256	424
Other revenues	61	157	120
Total net revenues	958	1,815	1,358
Operating expenses:			
Brokerage and transaction	114	158	179
Technology and development	215	1,234	878
Operations	135	368	285
Marketing	186	325	103
General and administrative	295	1,371	924
Total operating expenses	945	3,456	2,369
Change in fair value of convertible notes and warrant liability	—	2,045	—
Other expense (income), net	—	(1)	16
Income (loss) before income taxes	13	(3,685)	(1,027)
Provision for income taxes	6	2	1
Net income (loss)	$ 7	$ (3,687)	$ (1,028)
Net income (loss) attributable to common stockholders:			
Basic	$ 3	$ (3,687)	$ (1,028)
Diluted	$ 3	$ (3,687)	$ (1,028)
Net income (loss) per share attributable to common stockholders:			
Basic	$ 0.01	$ (7.49)	$ (1.17)
Diluted	$ 0.01	$ (7.49)	$ (1.17)
Weighted-average shares used to compute net income (loss) per share attributable to common stockholders:			
Basic	225,748,355	492,381,190	878,630,024
Diluted	244,997,388	492,381,190	878,630,024

See Accompanying Notes to the Consolidated Financial Statements.

ROBINHOOD MARKETS, INC.
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)

	Year Ended December 31,		
(in millions)	**2020**	**2021**	**2022**
Net income (loss)	$ 7	$ (3,687)	$ (1,028)
Other comprehensive loss, net of tax:			
Foreign currency translation	—	—	(1)
Total other comprehensive loss, net of tax	—	—	(1)
Total comprehensive income (loss)	$ 7	$ (3,687)	$ (1,029)

See Accompanying Notes to the Consolidated Financial Statements.

ROBINHOOD MARKETS, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS

(in millions)	Year Ended December 31, 2020	2021	2022
Operating activities:			
Net income (loss)	$ 7	$ (3,687)	$ (1,028)
Adjustments to reconcile net income (loss) to net cash provided by (used in) operating activities:			
Depreciation and amortization	10	26	61
Impairment of long-lived assets	—	—	45
Provision for credit losses	59	78	36
Share-based compensation	24	1,572	654
Change in fair value of convertible notes and warrant liability	—	2,045	—
Other	2	(1)	35
Changes in operating assets and liabilities:			
Segregated securities under federal and other regulations	(135)	135	—
Receivables from brokers, dealers, and clearing organizations	(104)	36	12
Receivables from users, net	(2,772)	(3,362)	3,386
Securities borrowed	—	—	(517)
Deposits with clearing organizations	(103)	(102)	142
Current and non-current prepaid expenses	—	(135)	33
Other current and non-current assets	(46)	(54)	(26)
Accounts payable and accrued expenses	67	134	(62)
Payables to users	3,532	578	(1,775)
Securities loaned	1,247	1,730	(1,817)
Other current and non-current liabilities	88	122	(31)
Net cash provided by (used in) operating activities	1,876	(885)	(852)
Investing activities:			
Purchase of property, software, and equipment	(24)	(63)	(28)
Capitalization of internally developed software	(8)	(20)	(29)
Acquisitions of a business, net of cash acquired	—	(125)	—
Purchase of investments	—	(27)	(25)
Sales of investments	—	—	42
Other	—	(3)	(20)
Net cash used in investing activities	(32)	(238)	(60)
Financing activities:			
Proceeds from issuance of common stock in connection with initial public offering, net of offering costs	—	2,052	—
Proceeds from issuance of common stock under the Employee Stock Purchase Plan	—	7	16
Taxes paid related to net share settlement of equity awards	—	(422)	(12)
Proceeds from issuance of convertible notes and warrants	—	3,552	—
Draws on credit facilities	938	1,968	21
Repayments on credit facilities	(938)	(1,968)	(21)
Payments of debt issuance costs	—	—	(10)
Proceeds from issuance of redeemable convertible preferred stock, net of issuance costs	1,267	—	—
Proceeds from exercise of stock options, net of repurchases	9	14	6
Net cash provided by financing activities	1,276	5,203	—
Effect of foreign exchange rate changes on cash and cash equivalents	—	—	(1)
Net increase (decrease) in cash, cash equivalents, segregated cash and restricted cash	3,120	4,080	(913)
Cash, cash equivalents, segregated cash and restricted cash, beginning of the period	3,070	6,190	10,270
Cash, cash equivalents, segregated cash and restricted cash, end of the period	$ 6,190	$ 10,270	$ 9,357
Cash and cash equivalents, end of the period	$ 1,403	$ 6,253	$ 6,339
Segregated cash, end of the period	4,780	3,992	2,995
Restricted cash (current and non-current), end of the period	7	25	23
Cash, cash equivalents, segregated cash and restricted cash, end of the period	$ 6,190	$ 10,270	$ 9,357
Supplemental disclosures:			
Cash paid for interest	$ 3	$ 12	$ 12
Cash paid for income taxes, net of refund received	$ 6	$ 6	$ 4

See Accompanying Notes to the Consolidated Financial Statements.

ROBINHOOD MARKETS, INC.
CONSOLIDATED STATEMENTS OF MEZZANINE EQUITY AND STOCKHOLDERS' (DEFICIT) EQUITY

	Redeemable convertible preferred stock		Common stock		Additional paid-in capital	Accumulated other comprehensive income	Accumulated deficit	Total stockholders' (deficit) equity
(in millions, except for number of shares)	Shares	Amount	Shares	Amount				
Balance as of December 31, 2019	321,626,778	$ 913	224,802,545	$ —	$ 99	$ 1	$ (197)	$ (97)
Net income	—	—	—	—	—	—	7	7
Shares issued in connection with stock option exercise, net of repurchases	—	—	4,229,001	—	9	—	—	9
Issuance of Series F convertible preferred stock, net of issuance costs	48,000,000	599	—	—	—	—	—	—
Issuance of Series G convertible preferred stock, net of issuance costs	43,116,119	668	—	—	—	—	—	—
Vesting of early-exercised stock options	—	—	—	—	1	—	—	1
Change in other comprehensive income	—	—	—	—	—	—	—	—
Share-based compensation	—	—	—	—	25	—	—	25
Balance as of December 31, 2020	412,742,897	$ 2,180	229,031,546	$ —	$ 134	$ 1	$ (190)	$ (55)

See Accompanying Notes to the Consolidated Financial Statements.

ROBINHOOD MARKETS, INC.
CONSOLIDATED STATEMENTS OF MEZZANINE EQUITY AND STOCKHOLDERS' (DEFICIT) EQUITY

	Redeemable convertible preferred stock		Common stock(1)		Additional paid-in capital	Accumulated other comprehensive income	Accumulated deficit	Total stockholders' (deficit) equity
(in millions, except for number of shares)	Shares	Amount	Shares	Amount				
Balance as of December 31, 2020	412,742,897	$ 2,180	229,031,546	$ —	$ 134	$ 1	$ (190)	$ (55)
Net loss	—	—	—	—	—	—	(3,687)	(3,687)
Shares issued in connection with stock option exercise, net of repurchases	—	—	6,832,725	—	14	—	—	14
Issuance of common stock in connection with Employee Stock Purchase Plan	—	—	298,031	—	7	—	—	7
Issuance of common stock in connection with initial public offering, net of issuance costs	—	—	56,729,194	—	2,052	—	—	2,052
Issuance of common stock upon settlement of RSUs	—	—	32,133,589	—	—	—	—	—
Shares withheld related to net share settlement	—	—	(11,160,525)	—	(422)	—	—	(422)
Conversion of preferred stock to common stock	(412,742,897)	(2,180)	412,742,897	—	2,180	—	—	2,180
Conversion of convertible notes to common stock	—	—	137,305,156	—	5,218	—	—	5,218
Reclassification of warrant liability to stockholders' equity	—	—	—	—	380	—	—	380
Vesting of replacement awards issued in connection with acquisition					1			1
Share-based compensation	—	—	—	—	1,605	—	—	1,605
Balance as of December 31, 2021	—	$ —	863,912,613	$ —	$ 11,169	$ 1	$ (3,877)	$ 7,293

See Accompanying Notes to the Consolidated Financial Statements.

ROBINHOOD MARKETS, INC.
CONSOLIDATED STATEMENTS OF MEZZANINE EQUITY AND STOCKHOLDERS' (DEFICIT) EQUITY

	Redeemable convertible preferred stock		Common stock[1]		Additional paid-in capital	Accumulated other comprehensive income (loss)	Accumulated deficit	Total stockholders' (deficit) equity
(in millions, except for number of shares)	Shares	Amount	Shares	Amount				
Balance as of December 31, 2021	—	$ —	863,912,613	$ —	$ 11,169	$ 1	$ (3,877)	$ 7,293
Net loss	—	—	—	—	—	—	(1,028)	(1,028)
Shares issued in connection with stock option exercise, net of repurchases	—	—	2,318,267	—	6	—	—	6
Issuance of common stock in connection with Employee Stock Purchase Plan	—	—	1,907,241	—	16	—	—	16
Issuance of common stock upon settlement of restricted stock units, net of shares withheld	—	—	24,613,450	—	(12)	—	—	(12)
Change in other comprehensive income	—	—	—	—	—	(1)	—	(1)
Share-based compensation	—	—	—	—	682	—	—	682
Balance as of December 31, 2022	—	$ —	892,751,571	$ —	$ 11,861	$ —	$ (4,905)	$ 6,956

(1) The share amounts listed above combine common stock, Class A common stock and Class B common stock. In connection with the completion of our initial public offering, all previously outstanding shares of common stock were reclassified into Class A common stock and Class B common stock. See Note 1 - Description of Business and Summary of Significant Accounting Policies, for further information.

See Accompanying Notes to the Consolidated Financial Statements.

NOTE 1: DESCRIPTION OF BUSINESS AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Robinhood Markets, Inc. ("RHM" and, together with its subsidiaries, "Robinhood," the "Company," "we," or "us") was incorporated in the State of Delaware on November 22, 2013. Our most significant, wholly-owned subsidiaries are:

- Robinhood Financial LLC ("RHF"), a registered introducing broker-dealer;
- Robinhood Securities, LLC ("RHS"), a registered clearing broker-dealer;
- Robinhood Crypto, LLC ("RHC"), which provides users the ability to buy, sell, and transfer cryptocurrencies and is responsible for the custody of user cryptocurrencies held by users on our platform; and
- Robinhood Money, LLC ("RHY"), which offers a pre-paid debit card (the "Robinhood Cash Card") and a spending account that help customers invest, save, and earn rewards.

Acting as the agent of the user, we facilitate the purchase and sale of options, cryptocurrencies, and equities through our platform by routing transactions through market makers, who are responsible for trade execution. Upon execution of a trade, users are legally required to purchase options, cryptocurrencies, or equities for cash from the transaction counterparty or to sell options, cryptocurrencies, or equities for cash to the transaction counterparty, depending on the transaction. We facilitate and confirm trades only when there are binding, matched legal obligations from the user and the market maker on both sides of the trade. Our users have ownership of the securities they transact on our platform, including those that collateralize margin loans, and, as a result, such securities are not presented on our consolidated balance sheets, other than user-held fractional shares which are presented gross. Our users also have ownership of the cryptocurrencies they transact on our platform (none of which are allowed to be purchased on margin and which do not serve as collateral for margin loans); however, following our adoption of Staff Accounting Bulletin 121 ("SAB 121"), we recognize a liability to reflect our safeguarding obligation along with a corresponding asset on our balance sheet related to the cryptocurrencies we hold in custody for users (refer to Note 2 - Recent Accounting Pronouncements, for more information on the recent adoption of SAB 121).

On August 2, 2021, we closed our IPO of 55.0 million shares of Class A common stock. On August 31, 2021, we sold an additional 4.4 million shares of Class A common stock pursuant to the option granted to the underwriters to purchase additional shares.

Basis of Presentation

The accompanying consolidated financial statements have been prepared in accordance with generally accepted accounting principles in the United States ("GAAP"). The consolidated financial statements include the accounts of RHM and its wholly-owned subsidiaries. All intercompany balances and transactions have been eliminated.

Certain reclassifications have been made to prior year amounts to conform to the current year presentation. The impact of these reclassifications is immaterial to the presentation of the consolidated financials statements taken as a whole.

Use of Estimates

The preparation of consolidated financial statements in accordance with GAAP requires management to make estimates and assumptions that affect the reported amounts in the consolidated financial statements and accompanying notes. We base our estimates on historical experience, and other assumptions we believe to be reasonable under the circumstances. Assumptions and estimates used in preparing our consolidated financial statements include, but are not limited to, those related to revenue recognition and share-based compensation, the determination of allowances for credit losses, valuation of user cryptocurrencies safeguarding obligation and corresponding asset, investment valuation, capitalization of internally developed software, useful lives of property, software, and equipment, valuation and useful lives of intangible assets, incremental borrowing rate used to calculate operating lease right-of-use assets and related liabilities, impairment of long-lived assets, uncertain tax positions, income taxes, accrued and contingent liabilities. Actual results could differ from these estimates and could have a material adverse effect on our operating results.

Segment Information

We operate and report financial information in one operating segment. Operating segments are defined as components of an enterprise for which separate financial information is evaluated regularly by the chief operating decision maker in deciding how to allocate resources and assess performance. All our revenues and substantially all of our assets are attributed to or located in the United States.

Variable Interest Entities

We evaluate our ownership, contractual and other interests in entities to determine if we have a variable interest in an entity. These evaluations are complex, involve judgment, and the use of estimates and assumptions based on available historical and prospective information, among other factors. If we determine that an entity for which we hold a contractual or ownership interest in is a variable interest entity ("VIE") and that we are the primary beneficiary, we consolidate such entity in the consolidated financial statements. The primary beneficiary of a VIE is the party that meets both of the following criteria: (1) has the power to make decisions that most significantly affect the economic performance of the VIE; and (2) has the obligation to absorb losses or the right to receive benefits that in either case could potentially be significant to the VIE. Periodically, we determine whether any changes in the interest or relationship with the entity impacts the determination of whether we are still the primary beneficiary. If we are not deemed to be the primary beneficiary in a VIE, we account for the investment or other variable interests in a VIE in accordance with applicable GAAP.

Revenue Recognition

Transaction-Based Revenues

We primarily earn transaction-based revenues from routing user orders for options, cryptocurrencies, and equities to market makers when the performance obligation is satisfied, which is at the point in time when a routed order is executed by the market maker. The transaction price for options is on a per contract basis, while for equities it is primarily based on the bid-ask spread of the underlying trading activity. For cryptocurrencies, the transaction price is a fixed percentage of the notional order value. For each trade type, all market makers pay the same transaction price. Payments are collected monthly in arrears from each market maker.

Net Interest Revenues

Net interest revenues consist of interest revenues less interest expenses. We earn interest revenues on margin loans to users, corporate cash and investments, segregated cash and cash equivalents, deposits with clearing organizations, and Cash Sweep. We also earn and incur interest revenues and expenses on securities lending transactions. We incur interest expenses in connection with our revolving credit facilities.

Other Revenues

Other revenues primarily consists of Robinhood Gold subscription fees. Our contract with users are for a term of 30 days and renew automatically each month. Subscription revenue is recognized ratably over the subscription period as the performance obligation is satisfied.

Other revenues also consist of proxy rebates, proxy revenues, and ACATS fees charged to users. Proxy rebates are revenues earned through our partnership with a third-party investor communications company. We provide certain shareholder information to the third-party company, which is used to send investor materials to shareholders, such as materials related to shareholder meetings and voting instruction forms. We earn a share of the revenue the third-party company receives from issuers, and recognize the revenue when the performance obligation of providing data is satisfied. During 2022, we terminated our partnership with the third-party proxy service provider and began using Say Technologies, a wholly-owned subsidiary, to provide proxy and investor communications services. We now earn proxy revenue directly from issuers.

ACATS fees are charged to users for facilitating the transfer of part or all of their accounts to another broker-dealer. We recognize revenue when our performance obligation of administering the transfer is satisfied.

Concentrations of Revenue and Credit

Concentrations of Revenue

We derived transaction-based revenues from individual market makers in excess of 10% of total revenues, as follows:

	Year Ended December 31,		
	2020	2021	2022
Market maker:			
Citadel Securities, LLC	34 %	22 %	16 %
Entities affiliated with Susquehanna International Group, LLP(1)	18 %	12 %	8 %
Entities affiliated with Wolverine Holdings, L.P.(2)	10 %	10 %	8 %
Tai Mo Shan Limited(3)	— %	15 %	3 %
All others individually less than 10%	13 %	18 %	24 %
Total as percentage of total revenue:	75 %	77 %	59 %

(1) Consists of Global Execution Brokers, LP and G1X Execution Services, LLC
(2) Consists of Wolverine Execution Services, LLC and Wolverine Securities, LLC
(3) Member of Jump Trading Group

Concentrations of Credit

We are engaged in various trading and brokerage activities in which the counterparties primarily include broker-dealers, banks, and other financial institutions. In the event our counterparties do not fulfill their obligations, we may be exposed to risk. The risk of default depends on the creditworthiness of the counterparty. Default of a counterparty in equities and options trades, which are facilitated through clearinghouses, would generally be spread among the clearinghouse's members rather than falling entirely on us. It is our policy to review, as necessary, the credit standing of each counterparty.

Operating Expenses

Brokerage and Transaction

Brokerage and transaction costs primarily consist of broker-dealer transaction expenses (such as fees paid to centralized clearinghouses and regulatory fees), market data expenses, cash and share-based compensation and benefits as well as allocated overhead for employees engaged in clearing and brokerage functions, and Robinhood Cash Card transactions expenses (such as network fees and card processing fees). A large portion of our brokerage and transaction costs are variable and tied to trading and transaction volumes on our platform. For the year ended December 31, 2022, brokerage and transaction costs also included a $57 million as a result of a processing error occurred in December 2022 (refer to Part II, Item 7 of this Annual Report, “Non-GAAP Financial Measures” for further details).

Technology and Development

Technology and development costs primarily consist of cash and share-based compensation and benefits as well as allocated overhead for engineering, data science, and design personnel who support and improve our platform and develop new products, costs for cloud infrastructure services, and costs associated with computer hardware and software, including amortization of internally developed software.

Operations

Operations costs consist of customer service related expenses, including cash and share-based compensation and benefits as well as allocated overhead for employees engaged in customer support, and costs incurred to support and improve customer experience (such as third-party customer service vendors).

Operations costs also include our provision for credit losses and fraud in connection with unrecoverable receivables due to Fraudulent Deposit Transactions and chargebacks for unauthorized debit card use.

Marketing

Marketing costs primarily consist of cash and share-based compensation and benefits as well as allocated overhead for employees engaged in the marketing function. Marketing costs also include digital marketing, brand marketing, and creative services costs for creation, production, and placement of advertisements and marketing content, as well as marketing incentive expenses associated with the Robinhood Referral Program. Other marketing costs include cash credits we offer to customers, which primarily relate to remediation for losses experienced by our customers due to service interruptions on our platform and reimbursement of direct losses incurred by our customers from allegedly unauthorized account activity. Advertising costs are expensed as incurred and were $78 million, $101 million and $52 million in the years ended December 31, 2020, 2021, and 2022.

General and Administrative

General and administrative costs primarily consist of cash and share-based compensation and benefits as well as allocated overhead for certain executives and employees engaged in legal, finance, human resources, risk, and compliance. General and administrative costs also include legal expenses, other professional fees, settlements and penalties, and business insurance.

Employee Retirement Benefits

We offer a defined contribution 401(k) plan to full-time employees. Employees may elect to contribute to a traditional 401(k) plan, which qualifies as a deferred compensation arrangement under Section 401 of the Code. In this case, participating employees defer a portion of their pre-tax earnings. Employees may also contribute to a Roth 401(k) plan using post-tax dollars. We match employee contributions up to 3%, and have incurred $3 million, $10 million, and $14 million of expense related to matching for the years ended December 31, 2020, 2021, and 2022.

Research and Development Costs

Research and development costs described in Accounting Standards Codification ("ASC") 730, Research and Development, are expensed as incurred. Our research and development costs consist primarily of employee compensation and benefits for our engineering and research teams, including share-based compensation. Research and development costs recorded in operating expenses under ASC 730 were $52 million, $438 million, and $381 million for the years ended December 31, 2020, 2021, and 2022.

Share-based Compensation

Common Stock Fair Value

The fair value of our common stock is determined on the grant date using the closing price of our common stock, which is traded on the Nasdaq Global Select Market.

Prior to our IPO, the absence of an active market for our common stock required our board of directors to determine the fair value of our common stock for each grant date with respect to which awards were approved. Our board of directors exercised reasonable judgement and considered numerous objective and subjective factors to determine the best estimate of the fair value of our common stock including: independent contemporaneous third-party valuations of our common stock, the prices paid for common and redeemable convertible preferred stock to third-party investors in arms-length transactions, our financial condition, results of operations, and capital resources, the valuation of comparable companies, the lack of marketability of our common stock, and general and industry specific economic outlook, among other factors.

Stock Options

We estimate the fair value of stock options granted to employees using the Black-Scholes option-pricing model. The fair value of stock options is recognized as compensation on a straight-line basis over the requisite service period. Forfeitures are accounted for when they occur.

The Black-Scholes option-pricing model incorporates various assumptions in estimating the fair value of stock-based awards. In addition to the fair value of our common stock, these variables include:

Expected volatility—As we do not have sufficient trading history of our common stock, we estimate the volatility of our common stock on the date of grant using the blended approach which considers the weighted average of historical stock price of our own stock and comparable publicly-traded companies over a period equal to the expected term of the award.

Expected term—We determine the expected term based on the average period the stock options are expected to remain outstanding using the simplified method, generally calculated as the midpoint of the stock options' vesting term and contractual expiration period, as we do not have sufficient historical information to develop reasonable expectations about future exercise patterns and post-vesting employment termination behavior.

Risk-free interest rate—Based on the U.S. Treasury yield curve that corresponds with the expected term at the time of grant.

Expected dividend yield—We utilize a dividend yield of 0% as we have not paid, and do not anticipate paying, dividends on our common stock.

Assumptions used in valuing non-employee stock options are generally consistent with those used for employee stock options with the exception that the expected term is over the contractual life.

Time-Based RSUs

We have granted Time-Based RSUs that vest upon the satisfaction of a time-based service condition. Prior to our IPO, our Time-Based RSUs vested based upon the satisfaction of both a time-based service condition and a performance-based condition, namely the occurrence of a liquidity event such as the IPO. The fair value of our RSUs is estimated based on the fair value of our common stock on the date of grant. The time-based service condition for our awards is generally satisfied over four years. For Time-Based RSUs granted pre-IPO, we record share-based compensation expense on an accelerated attribution method over the requisite service period, as these awards include a performance-based vesting condition. The performance-based condition for our pre-IPO grants was satisfied upon the occurrence of the IPO in 2021, at which point we recorded a cumulative one-time share-based compensation expense determined using the awards' grant-date fair value. Share-based compensation related to the remaining time-based service after the IPO is recorded over the remaining requisite service period. As of December 31, 2020 and 2021, we had not recognized share-based compensation for awards with performance-based conditions because the IPO had not occurred and, therefore, could not be considered probable. No performance-based conditions exist for our post-IPO grants, and therefore for grants of Time-Based RSUs issued post-IPO, we record share-based compensation expense on a straight line basis over the requisite service period.

Market-Based RSUs

We have granted RSUs that vest upon the satisfaction of all the following conditions: time-based service conditions, performance-based conditions, and market-based conditions. The time-based service condition for these awards generally is satisfied over six years. The performance-based conditions are satisfied upon the occurrence of an IPO. The market-based conditions are satisfied upon our achievement of specified share prices.

For market-based awards, we determine the grant-date fair value utilizing a Monte Carlo valuation model, which incorporates various assumptions including expected stock price volatility, expected term, risk-free interest rates, expected date of an IPO, and expected capital raise percentage. We estimate the expected term based on various vesting scenarios, as these awards are not considered "plain vanilla." We estimate the expected date of an IPO based on our expectation at the time of measurement of the award's value.

We record share-based compensation expense for market-based equity awards on an accelerated attribution method over the requisite service period, and only if performance-based conditions are considered probable to be satisfied. We determine the requisite service period by comparing the derived service period to achieve the market-based condition and the explicit time-based service period, using the longer of the two service periods as the requisite service period. Upon the occurrence of our IPO in 2021, we recorded a cumulative one-time share-based compensation expense determined using the grant-date fair values. Share-based compensation related to remaining time-based service and market-based conditions to be met will be recorded over the remaining derived requisite service period.

Net Income (Loss) per Share

Basic and diluted earnings per share are computed using the two-class method, which considers participating securities as a separate class of shares. Our participating securities consist of all series of our redeemable convertible preferred stock. Under the two-class method, net loss is not allocated to the redeemable convertible preferred stock as the preferred stockholders do not have a contractual obligation to share in our losses.

Basic earnings per share is computed by dividing net income available to our common stockholders, adjusted to exclude earnings allocated to participating securities, by the weighted-average number of shares of common stock outstanding during the period. Diluted earnings per share is computed on the basis of the weighted-average number of shares of common stock plus the effect of dilutive potential common shares outstanding during the period.

Cash and Cash Equivalents

Cash and cash equivalents include deposits with banks and money market funds or highly liquid financial instruments with maturities of three months or less at the time of purchase. We maintain cash in bank accounts at financial institutions that exceed federally insured limits. We also maintain cash in money market funds which are not FDIC insured. We are subject to credit risk to the extent any financial institution with which we conduct business is unable to fulfill contractual obligations on our behalf. As we have not experienced any losses in such accounts and we believe that we have placed our cash on deposit with financial institutions which are financially stable, we do not have an expectation of credit losses for these arrangements.

Cash Segregated Under Federal and Other Regulations

We are required to segregate cash for the exclusive benefit of customers and proprietary accounts of brokers in accordance with the provision of Rule 15c3-3 under the Exchange Act. We continually review the credit quality of our counterparties and have not experienced a default. As a result, we do not have an expectation of credit losses for these arrangements.

Restricted Cash

We are required to maintain restricted cash deposits to back letters of credit for certain property leases. We have no ability to draw on such funds as long as they remain restricted under the applicable agreements. Cash subject to restrictions that expire within one year is included in other current assets in our consolidated balance sheets. For the years ended December 31, 2021 and 2022, current restricted cash balances were $1 million. Cash subject to restrictions that exceed one year is included in non-current assets in our consolidated balance sheets. For the years ended December 31, 2021 and 2022, non-current restricted cash balances were $24 million and $22 million.

Securities Borrowing and Lending

We operate a securities lending program under which shares that users have pledged to us to collateralize their margin borrowing are lent by us to third parties (“Margin Securities Lending”) and a securities lending program under which we borrow fully-paid shares from participating users and lend them to third parties (“Fully-Paid Securities Lending”). We also occasionally borrow securities from third parties for operational purposes, and we occasionally lend to third parties securities that we hold for our own account (such as our holdings to support fractional share operations).

When we lend securities to third parties, the borrower provides cash as collateral. We earn interest revenue on cash collateral deposited by borrowers, and we can also earn additional revenue for lending certain securities based on demand for those securities. For our Fully-Paid Securities Lending, portions of such revenues are paid to participating users, and those payments are recorded as interest expense. For the year ended December 31, 2021, interest revenue earned and interest expenses incurred related to the Fully-Paid Securities Lending program were not material. For the year ended December 31, 2022, Fully-Paid Securities Lending program interest revenue earned was $11 million and interest expenses incurred was $2 million.

When we borrow securities from users participating in the Fully-Paid Securities Lending program (or from third parties), we provide cash as collateral and we record a receivable representing our right to the return of that collateral. The amount of that receivable is presented in "securities borrowed" on our consolidated balance sheets. In the case of our Fully-Paid Securities Lending program, the cash collateral is held by a third-party bank in a deposit account pledged to the user, which we administer as the user's agent. Users are not entitled to interest on such account, and any interest earned is for our benefit.

Our authorization from users to lend shares that collateralize their margin borrowing is found in our margin account agreement, our borrowing of fully-paid shares from users is conducted under the terms of our Fully-Paid Securities Lending program to which users consent when they enroll in that program, and substantially all of our securities lending and borrowing transactions with third parties are conducted under the terms of an industry-standard master securities loan agreement ("MSLA"), which has an open contractual term and may be terminated upon notice by either party. We have also entered into fixed-term securities lending agreements with two financial institution counterparties (the "Fixed-Term Securities Lending Agreements"). One of these agreements has a contractual term of 30 days per lending transaction with a daily minimum commitment of $25 million and the other has a contractual term of 21 days per lending transaction with a daily minimum commitment of $35 million. Under these two agreements we lend to the counterparties (for a fixed term) securities that collateralize users' margin borrowing, and we obtain cash collateral from the counterparties that we use to provide liquidity support for our margin lending to users.

Each of the MSLAs and Fixed-Term Securities Lending Agreements establishes a master netting arrangement between the lender and the borrower. A master netting arrangement is an agreement between two counterparties that creates a right of set-off for amounts due to and from that same counterparty that is enforceable in the event of a default or bankruptcy. In connection with our securities borrowing and lending activities, however, our policy is to recognize all amounts that are subject to master netting arrangements on a gross basis in our consolidated balance sheets even though some of those amounts may be eligible for offset (i.e., to be presented on a net basis) under GAAP. Refer to Note 11 - Securities Borrowing and Lending, for more information and the gross presentation in tabular format.

Cash Sweep

Our users may elect to participate in Cash Sweep, which allows them to earn interest on their uninvested brokerage cash. As these balances are automatically swept to our partner banks they are not reflected on the consolidated balance sheet. For the year ended December 31, 2021, interest revenue earned and interest expenses incurred related to Cash Sweep were not material. For the year ended December 31, 2022, Cash Sweep interest revenue earned was $68 million and interest expenses incurred was $46 million.

Cryptocurrencies

We act as an agent in the cryptocurrency transactions that users initiate on our platform. We have determined we are an agent, for accounting purposes, because we do not control the cryptocurrency before delivery to the user, we are not primarily responsible for the delivery of cryptocurrency to our users, we are not exposed to risks arising from fluctuations of the market price of cryptocurrency before delivery to the user, and we do not set the prices charged to users. After purchasing cryptocurrency on the platform, users are the legal owners of cryptocurrency held under custody by us and users have all the rights and benefits of ownership, including the rights to appreciation and depreciation of the cryptocurrency. We do not allow users to purchase cryptocurrency on margin and cryptocurrency does not serve as collateral for margin loans. We hold cryptocurrency in custody for users in one or more omnibus cryptocurrency wallets; we do not utilize third-party custodians. We hold cryptographic key information and maintain internal record keeping for the cryptocurrencies we hold in custody for users, and we are obligated to secure such assets from loss or theft. Based on the terms of our user agreement and applicable law, we believe the cryptocurrency we hold in custody for users of our platform should be respected as users' property (and should not be available to satisfy the claims of our general creditors) in the event we were to enter bankruptcy. For additional information relating to platform bankruptcy generally, see Part I, Item 1A of this Annual Report, "Risk Factors—Risks Related to Cryptocurrency Products and Services—Cryptocurrency laws, regulations, and accounting standards are often difficult to interpret and are rapidly evolving in ways that are difficult to predict. Changes in these laws and regulations, or our failure to comply with them, could negatively impact cryptocurrency trading on our platform."

Investments

We invest in marketable debt securities which are classified as available-for-sale and are initially recorded at fair value. These securities are included in other current assets on the audited consolidated balance sheets and are comprised of asset-backed securities, commercial paper, corporate bonds and government bonds. We have elected the fair value option for our debt securities as we believe carrying these investments at fair value and taking changes in fair value through earnings best reflects their underlying economics. Fair value adjustments are presented in other expense (income), net in our consolidated statements of operations, and we elected to present interest earned on the debt securities as interest income.

Fair Value of Financial Instruments

We apply fair value accounting for all financial assets and liabilities and non-financial assets and liabilities that are recognized or disclosed at fair value in the consolidated financial statements on a recurring basis. Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. In determining fair value, we may use various valuation approaches, including market, income and/or cost approaches. The fair value hierarchy requires us to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value. Fair value is a market-based measure considered from the perspective of a market participant. Accordingly, even when market assumptions are not readily available, our own assumptions reflect those that market participants would use in pricing the asset or liability at the measurement date. The fair value measurement accounting guidance describes the following three levels used to classify fair value measurements:

Level 1 Inputs: unadjusted quoted prices in active markets for identical assets or liabilities that are accessible by us

Level 2 Inputs: quoted prices for similar assets and liabilities in an active market, quoted prices in markets that are not active or for which all significant inputs are observable, either directly or indirectly

Level 3 Inputs: unobservable inputs that are significant to the fair value of the assets or liabilities

A financial instrument's level within the fair value hierarchy is based on the lowest level of any input that is significant to the fair value measurement. The carrying amounts of certain financial instruments approximate their fair value due to the short-term nature, which include cash, cash segregated under federal and other regulations, receivables from brokers, dealers, and clearing organizations, receivables from users, net, deposits with clearing organizations, other current assets, accounts payable and accrued expenses, payable to users, securities loaned, and other current liabilities.

Receivables From Brokers, Dealers, and Clearing Organizations

Receivables from brokers, dealers, and clearing organizations include receivables from market makers for routing user orders for execution and other receivables from third-party brokers. These receivables are short term and settle within 30 days. We continually review the credit quality of our counterparties and have not experienced a default. As a result, we do not have an expectation of credit losses for these arrangements.

Receivables From Users, Net

Receivable from users, net is primarily made up of margin receivables. Margin receivables are adequately collateralized by users' securities balances and are reported at their outstanding principal balance, net of an allowance for credit losses. We monitor margin levels and require users to deposit additional collateral, or reduce margin positions, to meet minimum collateral requirements and to avoid automatic liquidation of their positions.

We apply the practical expedient based on collateral maintenance provisions in estimating an allowance for credit losses for receivables from users. We have no expectation of credit losses for receivables from users that are fully secured, where the fair value of the collateral securing the balance is equal to or in excess of the receivable amount. This is based on our assessment of the nature of the collateral, potential future changes in collateral values, and historical credit loss information relating to fully secured receivables. In cases where the fair value of the collateral is less than the outstanding receivable balance from a user, we recognize an allowance for credit losses in the amount of the difference, or unsecured balance, immediately.

The provision for credit losses is recorded as operations expense on the consolidated statement of operations. We write-off unsecured balances when the balance becomes outstanding for over 180 days or when we otherwise deem the balance to be uncollectible.

Deposits With Clearing Organizations

We are required to maintain collateral deposits with clearing organizations such as Depository Trust & Clearing Corporation and Options Clearing Corporation which allow us to use their security transactions services for trade comparison, clearance, and settlement. The clearing organizations establish financial requirements, including deposit requirements, to reduce their risk. The required level of deposits may fluctuate significantly from time to time based upon the nature and size of users' trading activity and market volatility. We earn interest on these deposits which is included as net interest revenues in the consolidated statements of operations. As we have not experienced historic defaults, we do not have an expectation of credit losses for these arrangements.

Fractional Share Program

We operate our fractional share program for the benefit of our users and maintain an inventory of securities held exclusively for the fractional share program. This proprietary inventory is recorded within other current assets on our consolidated balance sheets.

When a user purchases a fractional share, we record the cash received for the user-held fractional share as pledged collateral and an offsetting liability to repurchase the shares as we concluded that we did not meet the criteria for derecognition under the accounting guidance. We measure our inventory of securities, user-held fractional shares and our repurchase obligation at fair value at each reporting period via the election of the fair value option, with realized and unrealized gains and losses, which equaled a net loss of $12 million and $7 million for the years ended December 31, 2021 and 2022, recorded in brokerage and transaction expenses in our consolidated statement of operations. We do not earn revenue from our users when they purchase or sell fractional shares from us. We earn transaction-based revenue when shares are purchased from market makers to fulfill fractional share transactions.

Other Current Assets

Other current assets primarily includes securities owned by us for the Robinhood Referral Program and fractional share program, investments, and other receivables.

Robinhood Referral Program

The stock rewarded under this program could be fractional share, one share or shares of one of twenty stocks, selected by our users from our previously purchased inventory of settled shares held exclusively for this program, which are included in other current assets in our consolidated balance sheets. Each stock reward is assigned at the time the reward is earned and each share cannot be associated with more than one reward at a time. Our inventory of settled shares is initially recorded at cost and marked to fair market value at each reporting period. As the inventory of shares are held specifically for the referral program and not as investments of the Company, gains and losses from changes in the fair market value of the shares are recorded within marketing expense in our consolidated statement of operations until the reward is claimed. Shares are derecognized when they are claimed by the user and delivered to the users' account.

We record an accrued liability within other current liabilities in our consolidated balance sheets at the time the bank account is linked with the expense recorded within marketing expense in our consolidated statement of operations. The liability is initially recorded at the fair market value of the assigned share or shares upon the reward being earned by the referred user (i.e., upon bank linkage) and marked to fair market value until claimed or reversed, with gains and losses also recorded within marketing expense. The liability is derecognized when the share is claimed by the user and delivered to the users' account. If a user does not claim the stock reward within 60 days of being notified, such reward expires and the liability is reversed. We estimate the amount of unclaimed rewards expected at each reporting period, using historical trends and data, and adjust the accrued liability and marketing expense accordingly.

Property, Software, and Equipment

Property, software, and equipment are stated at cost, net of accumulated depreciation and amortization. Depreciation and amortization is recorded on a straight-line basis over the useful life of the asset, which is as follows:

Property, Software, and Equipment	Useful Life
Computer equipment	3 years
Fixture and furniture	7 years
Tenant improvements	Shorter of estimated useful life or lease term
Internally developed software	3 years

Repairs and maintenance that do not enhance or extend the asset's function and/or useful life are charged to expenses as incurred. When items are sold or retired, the related cost and accumulated depreciation are removed from the accounts and any gains or losses arising from such transactions are recognized.

Internally developed software is capitalized when preliminary development efforts are successfully completed and it is probable that the project will be completed and the software will be used as intended. Capitalized costs consist of salaries and payroll related costs for employees and fees paid to third-party consultants who are directly involved in development efforts. Capitalized costs are amortized over the estimated useful life of the software on a straight-line basis and included in technology and development in the consolidated statements of operations. We expense software development costs as they are incurred during the preliminary project stage.

Non-Marketable Equity Securities

Investments in non-marketable equity securities without readily determinable fair values are initially recorded at cost and are subsequently adjusted to fair value for impairments and price changes from observable transactions in the same or a similar security from the same issuer. Non-marketable equity securities were not material for the periods presented and were included in other non-current assets on the audited consolidated balance sheets.

Leases

We elected to apply the short-term lease measurement and recognition practical expedient to our leases where applicable, thus leases with an initial term of 12 months or less are not recorded on the balance sheet; we recognize lease expense for these leases on a straight-line basis over the lease term. Operating lease right-of-use assets and operating lease liabilities are recognized at the present value of the future lease payments at the lease commencement date for each lease. The interest rate used to determine the present value of the future lease payments is our incremental borrowing rate because the interest rate implicit in most of our leases is not readily determinable. Our incremental borrowing rate is estimated to approximate the interest rate that we would pay to borrow on a collateralized basis with similar terms and payments as the lease. Operating lease right-of-use assets also include any prepaid lease payments and lease incentives. Our lease agreements generally contain lease and non-lease components. Non-lease components, which primarily include payments for maintenance and utilities, are combined with lease payments and accounted for as a single lease component. We include the fixed non-lease components in the determination of the right-of-use assets and operating lease liabilities. We record the amortization of the right-of-use asset and the accretion of lease liability as rent expense and allocate it as overhead in the consolidated statements of operations.

Business Combinations

We account for acquisitions of entities or asset groups that qualify as businesses in accordance with ASC 805, “Business Combinations”. The purchase price of the acquisition is allocated to the tangible and intangible assets acquired and liabilities assumed based on their estimated fair values at the acquisition date. The excess of the purchase price over those fair values is recorded as goodwill. During the measurement period, which may be up to one year from the acquisition date, we may record adjustments to the assets acquired and liabilities assumed with the corresponding offset to goodwill. Upon the conclusion of the measurement period or final determination of the values of assets acquired or liabilities assumed, whichever comes first, any subsequent adjustments are recorded in the consolidated statements of operations. See Note 3 - Business Combinations, for further information.

Goodwill

Goodwill represents the excess of the purchase price over the fair value of net assets acquired in a business combination and is allocated to reporting units expected to benefit from the business combination. We test goodwill for impairment at least annually, in the fourth quarter, or whenever events or changes in circumstances indicate that goodwill might be impaired. We evaluate our reporting units when changes in our operating structure occur, and if necessary, reassign goodwill using a relative fair value allocation approach. In testing for goodwill impairment, we first assess qualitative factors to determine whether the existence of events or circumstances leads to a determination that it is more likely than not that the fair value of a reporting unit is less than its carrying amount. If, after assessing the totality of events or circumstances, we determine it is not more likely than not that the fair value of a reporting unit is less than its carrying amount, then additional impairment testing is not required. However, if we conclude otherwise, we proceed to a quantitative assessment.

The quantitative assessment compares the estimated fair value of a reporting unit to its book value, including goodwill. If the fair value exceeds book value, goodwill is considered not to be impaired and no additional steps are necessary. However, if the book value of a reporting unit exceeds its fair value, an impairment loss will be recognized in an amount equal to that excess, limited to the total amount of goodwill allocated to that reporting unit. See Note 4 - Goodwill and Intangible Assets, for further information.

Intangible Assets, Net

Intangible assets are carried at cost and amortized on a straight-line basis over their estimated useful lives. The Company evaluates the remaining estimated useful life of its intangible assets being amortized on an ongoing basis to determine whether events and circumstances warrant a revision to the remaining period of amortization. See Note 4 - Goodwill and Intangible Assets, for further information.

Payables to Users

Payables to users represent users' funds on deposit, and/or funds accruing to users as a result of settled trades and other security related transactions.

Loss Contingencies

We are subject to claims and lawsuits in the ordinary course of business, including arbitration, class actions and other litigation, some of which include claims for substantial or unspecified damages. We are also the subject of inquiries, investigations, and proceedings by regulatory and other governmental agencies. We review our lawsuits, regulatory inquiries and other legal proceedings on an ongoing basis and provide disclosures and record loss contingencies in accordance with the loss contingencies accounting guidance. We establish an accrual for losses at management's best estimate when we assess that it is probable that a loss has been incurred and the amount of the loss can be reasonably estimated. If the reasonable estimate is a range and no amount within that range is considered a better estimate than any other amount, an accrual is recorded based on the bottom amount of the range. Accrual for loss contingencies are recorded in accounts payable and accrued expenses on the consolidated balance sheets and expensed in general and administrative expenses in our consolidated statements of operations. We monitor these matters for developments that would affect the likelihood of a loss and the accrued amount, if any, and adjust the amount as appropriate.

Income Taxes

Income tax expense is an estimate of current income taxes payable in the current fiscal year based on reported income before income taxes. Deferred income taxes reflect the effect of temporary differences and carryforwards that we recognize for financial reporting and income tax purposes at enacted tax rates expected to be in effect when taxes are actually paid or recovered.

We account for income taxes under the asset and liability method, which requires recognition of deferred income tax assets and liabilities for the expected future tax consequences of events that have been recognized in our consolidated financial statements, but have not been reflected in our taxable income. Deferred tax assets are evaluated for future realization and reduced by a valuation allowance to the extent we believe that they will not be realized. We consider many factors when assessing the likelihood of future realization of our deferred tax assets including, but not limited to, historical cumulative loss experience and expectations of future earnings, tax planning strategies, and the carry-forward periods available for tax reporting purposes. Our judgment regarding future profitability may change due to many factors, including future market conditions and the ability to successfully execute business plans and/or tax planning strategies. Should there be a change in the ability to recover deferred tax assets, our tax provision would increase or decrease in the period in which the assessment is changed.

We recognize a tax benefit from an uncertain tax position when it is more likely than not that the position will be sustained upon examination, including resolutions of any related appeals or litigation, based on the technical merits. Income tax positions must meet a more-likely-than-not recognition threshold at the effective date to be recognized. We account for uncertain tax positions, including net interest and penalties, as a component of income tax expense or benefit. We make adjustments to these uncertain tax positions in accordance with applicable income tax guidance and based on changes in facts and circumstances. To the extent that the final tax outcome of these matters is different from the amounts recorded, such differences will affect the provision for income taxes in the period in which such determination is made and could have a material impact to our consolidated financial statements and operating results.

NOTE 2: RECENT ACCOUNTING PRONOUNCEMENTS

Recently Adopted Accounting Pronouncements

In March 2022, the staff of the SEC issued SAB 121, which provides guidance to entities that have obligations to safeguard crypto-assets held in custody on behalf of their platform users. SAB 121 states that the entity should recognize a liability representing its obligation to safeguard such crypto-assets accompanied by a corresponding asset on its balance sheet representing the platform users' crypto-assets held in custody measured at fair value initially and at each subsequent reporting period. SAB 121 also states that accompanying disclosures should be considered regarding the entity's obligation to safeguard crypto-assets for platform users. We adopted SAB 121 as part of the financial statements covering the interim period ended June 30, 2022, with retrospective application as of the beginning of fiscal year 2022. As a result of (and solely by virtue of) our adoption of SAB 121, we recognized an asset captioned "Asset related to user cryptocurrencies safeguarding obligation" and a liability captioned "User cryptocurrencies safeguarding obligation" on our consolidated balance sheets. As of December 31, 2022, the carrying value of each was $8.4 billion We also added disclosures to Note 1 - Description of Business and Summary of Significant Accounting Policies and Note 8 - Investments and Fair Value Measurement.

Recently Issued Accounting Pronouncements Not Yet Adopted

In October 2021, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update 2021-08, "Business Combinations (Topic 805): Accounting for Contract Assets and Contract Liabilities from Contracts with Customers." This guidance requires contract assets and contract liabilities from contracts with customers that are acquired in a business combination to be recognized and measured as if the acquirer had originated the original contract. The guidance is effective for fiscal years beginning after December 15, 2022 on a prospective basis, including interim periods within those fiscal years. Early adoption is permitted. As of December 31, 2022, the planned adoption of this guidance is not expected to have any impact on our financial statements.

NOTE 3: BUSINESS COMBINATIONS

Acquisition of Say Technologies

On August 13, 2021, we acquired all outstanding stock of Say Technologies. New York-based Say Technologies, founded in 2017, is an investor communications and shareholder engagement platform. The acquisition of Say Technologies allows us to empower retail investors to access their full ownership rights by facilitating proxy and issuer materials delivery and making shareholder voting on corporate matters easier.

The acquisition date fair value of the consideration transferred for Say Technologies was $133 million, which consisted of the following:

(in millions)		Fair Value
Cash	$	132
Share-based compensation awards attributable to pre-combination services		1
Total consideration	$	133

We entered into holdback agreements with certain employees of Say Technologies for $11 million in cash payments, which are contingent upon the continuous service of the employees and treated as post-combination compensation expense over the required service period of three years. For employees of Say Technologies with unvested Say Technologies equity awards, we issued replacement awards whose aggregate estimated fair value was $6 million.

Transaction costs associated with the acquisition, which included legal, due diligence, and other professional fees, were not material.

The following table summarizes the fair value of assets acquired and liabilities assumed as of the date of acquisition:

(in millions)		Fair Value
Cash and cash equivalents	$	15
Accounts receivable		2
Goodwill		93
Intangible assets		35
Accounts payable, accrued expenses and other current liabilities		(9)
Deferred tax liability		(3)
Net assets acquired	$	133

The excess of purchase price over the fair value of net tangible and identifiable intangible assets acquired was recorded as goodwill, which is not deductible for tax purposes. Goodwill is primarily attributed to the assembled workforce of Say Technologies and anticipated operational synergies. The fair values assigned to tangible and identifiable intangible assets acquired and liabilities assumed are based on management's estimates and assumptions at the time of acquisition. The following table sets forth the components of identifiable intangible assets acquired and their estimated useful lives as of the date of acquisition:

(in millions, except years)		Fair Value	Useful Life
Developed technology	$	22	3
Customer relationships		12	10
Trade names		1	3
Total	$	35	

The overall weighted average useful life of the identified amortizable intangible assets acquired is five years. The estimated fair values of the intangible assets acquired approximate the amounts a market participant would pay for these intangible assets as of August 13, 2021. We used the replacement cost method to estimate the fair value of developed technology and the relief from royalty method to estimate the fair value of trade names. A multi-period excess earnings method was used to estimate the fair value of customer relationships.

Tangible net assets were valued at their respective carrying amounts as of the acquisition date, as these amounts approximated fair value.

During the fourth quarter of 2021, we recorded an immaterial measurement period adjustment to other non-current liabilities with a corresponding decrease to goodwill, based on facts and circumstances in existence as of the effective date of the acquisition.

Results of operations of Say Technologies were included in our results since the date of acquisition and were not material for the year ended December 31, 2022. Pro forma results of operations for Say Technologies have not been presented as the effect of this acquisition was not material.

NOTE 4: GOODWILL AND INTANGIBLE ASSETS

Goodwill

The following table summarizes the carrying amount of goodwill:

	December 31,	
(in millions)	2021	2022
Beginning balance	$ —	$ 101
Less: Accumulated impairment	—	—
Beginning balance, net	—	101
Additions due to business combinations[1]	101	—
Post-acquisition adjustments	—	(1)
Ending balance	$ 101	$ 100

(1) Substantially all of the additions related to the Say Technologies acquisition as disclosed in Note 3 - Business Combinations, and the remainder related to other immaterial business acquisitions.

There was no impairment of goodwill for the years ended December 31, 2021 and 2022.

Intangible Assets

The following tables summarize the components of intangible assets:

	December 31, 2021			
(in millions, except years)	Gross Carrying Value	Accumulated Amortization	Net Carrying Value	Weighted Average Remaining Useful Life - Years
Finite-lived intangible assets				
Developed technology	$ 23	$ (3)	$ 20	2.58
Customer relationships	12	$ —	12	9.62
Trade names	—	$ —	—	2.62
Indefinite-lived intangible assets	2	$ —	2	N/A
Total	$ 37	$ (3)	$ 34	

	December 31, 2022			
(in millions, except years)	Gross Carrying Value	Accumulated Amortization	Net Carrying Value	Weighted Average Remaining Useful Life - Years
Finite-lived intangible assets				
Developed technology	$ 23	$ (10)	$ 13	1.70
Customer relationships	12	(2)	10	8.62
Indefinite-lived intangible assets	2	—	2	N/A
Total	$ 37	$ (12)	$ 25	

Amortization expense of intangible assets was nil, $3 million, and $9 million for the years ended December 31, 2020, 2021, and 2022. There was no impairment of intangible assets for the years ended December 31, 2021 and 2022.

As of December 31, 2022, the estimated future amortization expense of finite-lived intangible assets was as follows:

(in millions)	Finite-lived Intangible Assets
2023	$ 9
2024	6
2025	1
2026	1
2027	1
Thereafter	5
Total	$ 23

NOTE 5: REVENUES

Disaggregation of Revenues

The following table presents our revenue disaggregated by revenue source:

(in millions)	Year Ended December 31, 2020	2021	2022
Transaction-based revenues:			
Options	$ 440	$ 690	$ 488
Cryptocurrencies	27	420	202
Equities	251	287	117
Other	2	5	7
Total transaction-based revenues	720	1,402	814
Net interest revenues:			
Margin interest	67	132	177
Interest on corporate cash and investments	2	1	103
Securities lending, net	98	136	89
Interest on segregated cash and cash equivalents and deposits	14	4	57
Cash Sweep, net	1	3	22
Interest expenses related to credit facilities	(5)	(20)	(24)
Total net interest revenues	177	256	424
Other revenues	61	157	120
Total net revenues	$ 958	$ 1,815	$ 1,358

Contract Balances

Contract receivables are recognized when we have an unconditional right to invoice and receive payment under a contract and are derecognized when cash is received. Transaction-based revenue receivables due from market makers are reported in receivables from brokers, dealers, and clearing organizations while other revenue receivables due from our relationship with a third-party investor communications company are reported in other current assets on the consolidated balance sheets.

Contract liabilities, which consist of unearned subscription revenue, are recognized when users remit cash payments in advance of the time we satisfy our performance obligations and are recorded as other current liabilities on the consolidated balance sheets.

The table below sets forth contract receivables and liabilities balances for the periods indicated:

(in millions)	December 31, 2021 Contract Receivables	Contract Liabilities
Beginning of the period, January 1, 2021	$ 112	$ 2
End of the period, December 31, 2021	83	3
Changes during the period	$ (29)	$ 1

(in millions)	December 31, 2022	
	Contract Receivables	Contract Liabilities
Beginning of period, January 1, 2022	$ 83	$ 3
End of period, December 31, 2022	60	3
Changes during the period	$ (23)	$ —

The difference between the opening and ending balances of our contract receivables primarily results from lower transaction-based revenue driven by the market environment which had a negative impact on the number of traders and Notional Trading Volume and timing differences between our performance and counterparties' payments. We recognized all revenue from amounts included in the opening contract liability balances for the year end December 31, 2022.

NOTE 6: RESTRUCTURING ACTIVITIES

April 2022 Restructuring

On April 26, 2022, we announced the April 2022 Restructuring as part of our efforts to improve efficiency and operating costs, increase our velocity, and ensure that we are responsive to the changing needs of our customers. The April 2022 Restructuring involved approximately 330 employees, representing approximately 9% of our full-time employees at that time.

We allowed affected employees' share-based awards to continue vesting over a transitional period (generally two months during which they remained employed but were not expected to provide active service), which were generally accounted for as a modification allowing a portion of the awards to vest that otherwise would have been forfeited. However, as a result of the reversal of share-based compensation expense that had been previously recognized (under the accelerated attribution method, generally), the April 2022 Restructuring resulted in a net reduction to share-based compensation of $24 million, which was recognized in the second quarter of 2022 (refer to Note 13 - Common Stock and Stockholders' (Deficit) Equity, for more information).

In addition, we recognized $17 million of cash restructuring and related charges in the second quarter of 2022, which primarily consisted of employee-related wages, benefits, and severance expense. As of December 31, 2022, all of the restructuring charges relating to the April 2022 Restructuring had been paid in full.

August 2022 Restructuring

On August 2, 2022, we announced the August 2022 Restructuring, which involved approximately 780 employees, representing approximately 23% of our full-time employees at the time, the planned closure of two offices, and related matters. These actions were part of a Company reorganization into a general manager ("GM") structure under which GMs have assumed broad responsibility for our individual businesses. As we continued to execute the August 2022 Restructuring, our lower headcount led us to evaluate our real estate portfolio. In the third quarter of 2022, we decided to partially or completely close five additional offices as part of the August 2022 Restructuring, four of which were not occupied.

In connection with the office closures describe above, we determined the carrying amount of the right-of-use assets and associated leasehold improvements exceeded their respective fair value, resulting in impairments of $30 million and $15 million. We utilized a probability-weighted approach and market estimates from a third-party real estate brokerage firm to project sublease income cash flows, net of brokerage commissions, for each of the office spaces and applied a market rate of return on similar assets as a discount factor to determine fair value. We attributed the impairments on a relative carrying value basis between the right-of-use assets and leasehold improvements. In addition, we accelerated depreciation of $9 million related to other fixed assets. The impairments were recognized in general and administrative expense on our consolidated statements of operations.

Similar to the April 2022 Restructuring, we allowed affected employees' share-based awards to continue vesting over a transitional period allowing a portion of the awards to vest that otherwise would have been forfeited. However, as a result of the reversal of share-based compensation expense that had been previously recognized (under the accelerated attribution method, generally), the August 2022 Restructuring resulted in a net reduction to share-based compensation of $53 million, which was recognized in the third quarter of 2022 (refer to Note 13 - Common Stock and Stockholders' (Deficit) Equity, for more information).

In addition, we recognized $34 million of cash restructuring and related charges primarily related to employee-related wages, benefits, and severance expense. As of December 31, 2022, all of the restructuring charges relating to the April 2022 Restructuring had been paid in full.

NOTE 7: ALLOWANCE FOR CREDIT LOSSES

Substantially all of the allowance for credit losses relate to unsecured balances of receivables from users due to Fraudulent Deposit Transactions and losses on margin lending. The following table summarizes the allowance for credit losses:

	Year Ended December 31,		
(in millions)	**2020**	**2021**	**2022**
Beginning balance	$ 17	$ 34	$ 40
Provision for credit losses	59	78	36
Write-offs	(42)	(72)	(58)
Ending balance	$ 34	$ 40	$ 18

NOTE 8: INVESTMENTS AND FAIR VALUE MEASUREMENT

Investments

Investments are included in other current assets on the consolidated balance sheet and consisted of the following:

	December 31, 2021			
(in millions)	**Amortized Cost**	**Unrealized Gains**	**Unrealized Losses**	**Fair Value**
Debt securities:				
Asset-backed securities	$ 5	$ —	$ —	$ 5
Commercial paper	14	—	—	14
Corporate bonds	7	—	—	7
Government bonds	1	—	—	1
Total investments	$ 27	$ —	$ —	$ 27

(in millions)	December 31, 2022 Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value
Debt securities:				
Commercial paper	5	—	—	5
Corporate bonds	2	—	—	2
Government bonds	3	—	—	3
Total investments	$ 10	$ —	$ —	$ 10

All of our debt securities as of December 31, 2022 had a stated contractual maturity or redemption date within one year.

Fair Value of Financial Instruments

Financial assets and liabilities measured at fair value on a recurring basis as of the date indicated below were presented on our consolidated balance sheets as follows:

(in millions)	December 31, 2021 Level 1	Level 2	Level 3	Total
Assets				
Cash equivalents:				
Money market funds	$ 4,004	$ —	$ —	$ 4,004
Other current assets:				
Asset-backed securities	—	5	—	5
Commercial paper	—	14	—	14
Corporate bonds	—	7	—	7
Government bonds	1	—	—	1
Equity securities - securities owned	14	—	—	14
User-held fractional shares	1,834	—	—	1,834
Total financial assets	$ 5,853	$ 26	$ —	$ 5,879
Liabilities				
Fractional share repurchase obligations	$ 1,834	$ —	$ —	$ 1,834
Total financial liabilities	$ 1,834	$ —	$ —	$ 1,834

(in millions)	December 31, 2022 Level 1	Level 2	Level 3	Total
Assets				
Cash equivalents:				
Money market funds	$ 735	$ —	$ —	$ 735
Other current assets:				
Commercial paper	—	5	—	5
Corporate bonds	—	2	—	2
Government bonds	3	—	—	3
Equity securities - securities owned	8	—	—	8
Asset related to user cryptocurrencies safeguarding obligation	—	8,431	—	8,431
User-held fractional shares	997	—	—	997
Total financial assets	$ 1,743	$ 8,438	$ —	$ 10,181
Liabilities				
User cryptocurrencies safeguarding obligation	$ —	$ 8,431	$ —	8,431
Fractional share repurchase obligations	997	—	—	997
Total financial liabilities	$ 997	$ 8,431	$ —	$ 9,428

During the year ended December 31, 2022, we did not have any transfers in or out of Level 3 assets or liabilities.

Safeguarded user cryptocurrencies

Safeguarded user cryptocurrencies were as follows:

(in millions)	December 31, 2022
Dogecoin (DOGE)	$ 2,802
Ethereum (ETH)	2,341
Bitcoin (BTC)	2,327
Other	961
Total user cryptocurrencies safeguarding obligation and corresponding asset	$ 8,431

The fair value of the user cryptocurrencies safeguarding obligation and the corresponding asset were determined based on observed market pricing representing the last price executed for trades of each cryptocurrency as of December 31, 2022.

Convertible Notes and Warrant Liability

In February 2021, we issued two tranches of convertible notes (the “convertible notes”) and granted to each purchaser of the Tranche I convertible notes a warrant to purchase equity securities (the “warrant liability”). We elected the fair value option for both tranches of the convertible notes as we believe it best reflects their underlying economics. Under the fair value option, the convertible notes were initially measured at their issuance date estimated fair value and subsequently remeasured at their estimated fair value at the end of each reporting period. Upon the closing of the IPO, all of our outstanding convertible notes and warrants were reclassified from liability to equity and the fair value was no longer required to be remeasured.

The following table sets forth a summary of the changes in the estimated fair value of our convertible notes and warrant liability:

	Year Ended December 31, 2021	
(in millions)	**Convertible notes[(2)]**	**Warrant liability**
Beginning balance	$ —	$ —
Issued during the period	3,299	253
Change in fair value[(1)]	1,919	127
Reclassifications to equity	(5,218)	(380)
Ending balance	$ —	$ —

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(1) We have elected to present the component related to accrued interest in the change in fair value of convertible notes and warrant liability.

(2) None of the expense recorded due to changes in fair value for the convertible notes was attributable to the change in the instrument-specific credit risk.

NOTE 9: INCOME TAXES

The components of income (loss) before income taxes were as follows:

	Year Ended December 31,		
(in millions)	**2020**	**2021**	**2022**
Domestic	$ 14	$ (3,687)	$ (1,028)
Foreign	(1)	2	1
Income (loss) before income taxes	$ 13	$ (3,685)	$ (1,027)

The components of the provision for (benefit from) income taxes were as follows:

	Year Ended December 31,		
(in millions)	**2020**	**2021**	**2022**
Current:			
Federal	$ 3	$ —	$ —
State	4	5	1
Foreign	—	—	—
Total current tax expense (benefit)	7	5	1
Deferred:			
Federal	—	(1)	—
State	—	(2)	—
Foreign	(1)	—	—
Total deferred tax expense (benefit)	(1)	(3)	—
Total provision for (benefit from) income taxes	$ 6	$ 2	$ 1

The reconciliation of statutory federal income tax rate and our effective income tax rate was as follows (in percentages):

	Year Ended December 31,		
	2020	2021	2022
Federal tax benefit at statutory rate	21.0 %	21.0 %	21.0 %
State tax benefit, net of federal benefit	(6.2)%	3.6 %	1.8 %
Foreign rate differential	— %	— %	— %
Share-based compensation	(19.2)%	(0.5)%	(12.3)%
Tender offer compensation	26.1 %	— %	— %
Research and development credits	(75.8)%	1.3 %	3.6 %
Non-deductible regulatory settlements	— %	(11.7)%	(0.3)%
Non-deductible change in convertible notes and warrant	151.8 %	(0.3)%	— %
Permanent differences	3.8 %	— %	(0.1)%
Other	0.4 %	— %	0.1 %
Change in valuation allowance	(55.8)%	(13.5)%	(13.9)%
Total provision for (benefit from) income taxes	46.1 %	(0.1)%	(0.1)%

Significant components of our deferred tax assets and liabilities consisted of the following:

	Year Ended December 31,	
	2021	2022
Deferred tax assets:		
User cryptocurrencies safeguarding obligation	$ —	$ 2,167
Net operating loss carryforwards	251	266
Tax credit carryforwards	81	134
Share-based compensation	135	85
Research and Experimentation expenditure amortization	—	83
Lease liability	40	38
Accruals and other liabilities	24	21
Other	22	15
Total deferred tax assets	$ 553	$ 2,809
Deferred tax liabilities:		
Asset related to user cryptocurrencies safeguarding obligation	$ —	$ (2,167)
Right of use assets	(34)	(24)
Depreciation and amortization	(23)	(10)
Total deferred tax liabilities	(57)	(2,201)
Valuation Allowance	(495)	(607)
Net deferred tax assets	$ 1	$ 1

The reconciliation of the beginning and ending amount of the deferred tax asset valuation allowance was as follows:

(in millions)	Year ended December 31, 2020	2021	2022
Balance at beginning of period	$ 35	$ 27	$ 495
Charged/(credited) to net income	(8)	471	112
Charges utilized/(write-offs)	—	(3)	—
Balance at end of period	$ 27	$ 495	$ 607

The realization of tax benefits of net deferred assets is dependent upon future levels of taxable income, of an appropriate character, in the periods the items are expected to be deductible or taxable. Based on all available evidence for the year ending December 31, 2022, we believe it is more likely than not that the tax benefits of the remaining U.S. federal, state, and certain foreign net deferred tax assets may not be realized, and accordingly, the net deferred tax assets have been fully offset by a valuation allowance. The valuation allowance increased by approximately $112 million for the year ended December 31, 2022.

As of December 31, 2022, we have $1,012 million of U.S. federal, $836 million of state, and $4 million of non-U.S. net operating loss carryforwards available to reduce future taxable income. Of the U.S. federal net operating loss carryforwards, $1 million will begin to expire in 2037 and the $1,011 million will carryforward indefinitely. Our state net operating losses begin to expire in 2023, while our non-U.S. net operating losses do not expire. We have U.S. federal tax credit carryforwards of $125 million that will begin to expire in 2039, if not utilized, and state tax credit carryforwards of $78 million that will begin to expire in 2026.

Utilization of the net operating loss and credit carryforwards may be subject to a substantial annual limitation due to the ownership change limitations provided by the Internal Revenue Code of 1986, as amended, and similar state provisions. The annual limitation may result in the expiration of net operating losses and tax credits before utilization.

We had unrecognized tax benefits of approximately $46 million and $58 million as of December 31, 2021 and 2022. These unrecognized tax benefits, if recognized, would not affect the effective tax rate. We record interest and penalties related to unrecognized tax benefits in income tax expenses. There were no interest or penalties accrued during the years ended December 31, 2021 and 2022.

The reconciliation of the beginning and ending amount of unrecognized tax benefits were as follows (in millions):

	Year Ended December 31, 2021	2022
Unrecognized benefit - beginning of period	$ 7	$ 46
Gross increases - current year tax positions	38	16
Gross increases - prior year tax positions	1	—
Gross decrease - prior year tax positions	—	(4)
Unrecognized benefit - end of period	$ 46	$ 58

We file in U.S. federal, various state, and foreign jurisdictions. The tax years from 2013 remain open to examination by the U.S. federal and state authorities, due to carryover of unused net operating losses and tax credits. The tax years from 2019 remain open for the most significant foreign jurisdiction.

NOTE 10: PROPERTY, SOFTWARE, AND EQUIPMENT, NET

Property, software, and equipment are presented net of accumulated depreciation and amortization and summarized as follows:

	Year Ended December 31,	
(in millions)	2021	2022
Internally developed software	$ 31	$ 106
Leasehold improvements	64	52
Computer equipment	24	32
Furniture and fixtures	22	14
Construction in progress	44	23
Total	185	227
Less: accumulated depreciation and amortization	(39)	(81)
Property, software, and equipment, net	$ 146	$ 146

Depreciation expense of property and equipment was $6 million, $15 million, and $26 million for the years ended December 31, 2020, 2021, and 2022.

Amortization expense of internally developed software was $4 million, $7 million, and $26 million for the years ended December 31, 2020, 2021, and 2022.

In connection with our August 2022 Restructuring, we recognized an impairment of $15 million associated with our leasehold improvements and accelerated depreciation of $9 million related to other fixed assets for the year ended December 31, 2022. Refer to Note 6 - Restructuring Activities for more information.

NOTE 11: SECURITIES BORROWING AND LENDING

When we lend securities to third parties we receive cash as collateral for the securities loaned. In the table below, the cash collateral we hold related to loaned securities is presented in “securities loaned” and the fair value of securities lent is presented in “security collateral pledged.” Similarly, when we borrow securities from third parties or fully-paid securities from users, we provide cash collateral. In the table below, the amount of that cash collateral is presented in “securities borrowed” and the fair value of the securities received is presented in “security collateral received.”

Our securities lending transactions are subject to enforceable master netting arrangements with other broker-dealers; however, we do not net securities borrowing and lending transactions. Therefore, activity related to securities borrowing and lending activities are presented gross in our consolidated balance sheets (refer to Note 1 - Description of Business and Summary of Significant Accounting Policies, for more information).

The following tables set forth certain balances related to our securities borrowing and lending activities:

(in millions)	December 31, 2021	December 31, 2022
Assets	**Securities borrowed**	
Gross amount of securities borrowed	$ —	$ 517
Gross amount offset on the consolidated balance sheets	—	—
Amounts of assets presented on the consolidated balance sheets	—	517
Gross amount of securities borrowed not offset on the consolidated balance sheets:		
Securities borrowed	—	517
Security collateral received	—	(509)
Net amount	$ —	$ 8

	2021	2022
Liabilities	**Securities loaned**	
Gross amount of securities loaned	$ 3,651	$ 1,834
Gross amount of securities loaned offset on the consolidated balance sheets	—	—
Amounts of liabilities presented on the consolidated balance sheets	3,651	1,834
Gross amount of securities loaned not offset on the consolidated balance sheets:		
Securities loaned	3,651	1,834
Security collateral pledged	(3,427)	(1,629)
Net amount	$ 224	$ 205

As described in Note 1 - Description of Business and Summary of Significant Accounting Policies, we obtain securities on terms that permit us to pledge and/or transfer securities to others. As of December 31, 2021 and 2022, we were permitted to re-pledge securities with a fair value of $9.21 billion and $4.36 billion under margin account agreements with users, and securities with a fair value of $0.3 million and $18.4 million that we had borrowed under MSLAs with third parties. Under the Fully-Paid Securities Lending program, as of December 31, 2022, we were permitted to re-pledge securities with a fair value of $4.45 billion including securities with a fair value of $490.4 million that we had borrowed from users.

As of December 31, 2021 and 2022, we had re-pledged securities with a fair value of $3.43 billion and $1.63 billion, in each case under MSLAs and Fixed-Term Securities Lending Agreements with third parties. In addition, as of December 31, 2021 and 2022, we had re-pledged $220.1 million and $231.2 million of the permitted amounts under the Margin Securities Lending program with clearing organizations to meet deposit requirements.

NOTE 12: FINANCING ACTIVITIES AND OFF-BALANCE SHEET RISK

Revolving Credit Facilities

October 2019 Credit Facility

In October 2019, we entered into a $200.0 million committed and unsecured revolving line of credit with a syndicate of banks maturing in October 2023 (the “October 2019 Credit Facility”). In October 2020, we amended the October 2019 Credit Facility and, among other things, increased the aggregate committed and unsecured revolving line of credit amount to $600.0 million with a maturity date of October 29, 2024. In April 2021, we further increased the aggregate credit amount available under the October

2019 Credit Facility to $625.0 million. Loans under the October 2019 Credit Facility bear interest, at our option, at a per annum rate of either (a) the Eurodollar Rate plus 1.00% or (b) the ABR. The Eurodollar Rate is equal to the Eurodollar Base Rate, which is derived from London Interbank Offered Rate ("LIBOR"), multiplied by the Statutory Reserve Rate (as defined in the agreement) at the applicable time. The ABR is the greatest of (i) the prime rate then in effect, (ii) the Federal Reserve Bank of New York rate then in effect plus 0.50% and (iii) the Eurodollar Rate at such time for a one month interest period plus 1.00%. If LIBOR is unavailable or if we and the administrative agent elect, the Eurodollar Rate will be replaced by a rate calculated with reference to the Secured Overnight Financing Rate (as defined in the agreement) as set forth in the October 2019 Credit Facility agreement or an alternate benchmark rate selected by us and the administrative agent.

In December 2022, the terms of the October 2019 Credit Facility were amended. Under the amendment, the October 2019 Credit Facility bears interest, at our option, at a per annum rate of either (a) the Adjusted Term Secured Overnight Financing Rate ("SOFR") plus 1.00% or (b) the Alternative Base Rate. The Adjusted Term SOFR Rate is equal to the Term SOFR Rate for such interest period, published by the Term SOFR Administrator, plus the applicable Term SOFR Adjustment at the applicable time. The Term SOFR Adjustment is (i) 0.11% per annum for an interest period of one month; (ii) 0.26% per annum for an interest period of three months; and (iii) 0.43% per annum for an interest period of six months. If the Adjusted Term SOFR Rate is less than the floor of 0%, such rate shall be deemed to be equal to the floor. As amended, the ABR is the greatest of (i) the prime rate then in effect, (ii) the Federal Reserve Bank of New York rate then in effect plus 0.50% and (iii) the Adjusted Term SOFR for a one month Interest Period plus 1.00%.

There were no outstanding borrowings under the October 2019 Credit Facility, as amended, at December 31, 2021 and 2022. We are obligated to pay a commitment fee calculated as a per annum rate equal to 0.10% on any unused amount of the October 2019 Credit Facility quarterly in arrears.

April 2022 Credit Facility

In April 2021, we entered into a $2.18 billion committed and secured revolving line of credit, subject to certain borrowing base limitations, with a maturity date of April 15, 2022 (the "April 2021 Credit Facility"). Borrowings from the April 2021 Credit Facility must be specified to be Tranche A, Tranche B, Tranche C or a combination thereof. Tranche A loans are secured by users' securities purchased on margin and are used primarily to finance margin loans. Tranche B loans are secured by the right to the return from National Securities Clearing Corporation ("NSCC") of NSCC margin deposits and cash and property in a designated collateral account and used for the purpose of satisfying NSCC deposit requirements. Tranche C loans are secured by the right to the return of eligible funds from any reserve account of the borrower and cash and property in a designated collateral account and used for the purpose of satisfying reserve requirements under Rule 15c3-3 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). Interest for this line of credit is determined at the time a loan is initiated and the applicable interest rate is calculated as a per annum rate equal to 1.25% for Tranche A loans and 2.50% for Tranche B and Tranche C loans, plus the Short-Term Funding Rate at the applicable time. The Short-Term Funding Rate is equal to the greatest of (i) the Eurodollar Rate for a one month interest period on such day, which equals to the Eurodollar Base Rate that is derived from LIBOR, multiplied by the Statutory Reserve Rate at the applicable time, (ii) the Federal Funds Effective Rate (as defined in the agreement) and (iii) the Overnight Bank Funding Rate (as defined in the agreement) in effect on such day. There were no outstanding borrowings under the April 2021 Credit Facility at December 31, 2021. We are obligated to pay a commitment fee calculated as a per annum rate equal to 0.50% on any unused amount of the April 2021 Credit Facility quarterly in arrears.

In April 2022, we entered into a $2.275 billion committed and secured revolving line of credit with a maturity date of April 10, 2023 (the "April 2022 Credit Facility"), amending and restating the April 2021 Credit Facility. Under circumstances described in the agreement for the April 2022 Credit Facility, the aggregate commitments may be increased by up to $1.138 billion, for a total commitment under the agreement of $3.413 billion. The April 2022 Credit Facility terms are otherwise substantially the same as the April 2021 Credit Facility in all material aspects except for the Short-Term Funding Rate, which is equal to the greatest of (i) Daily Simple SOFR (as defined in the agreement) plus 0.10%, (ii) the Federal Funds Effective Rate (as defined in the agreement) and (iii) the Overnight Bank Funding Rate (as defined in the agreement), in each case, in effect on such day. There were no outstanding borrowings under the April 2022 Credit Facility at December 31, 2022. We are obligated to pay a commitment fee calculated as a per annum rate equal to 0.50% on any unused amount of the April 2022 Credit Facility quarterly in arrears.

The October 2019 Credit Facility, as amended, and the April 2022 Credit Facility contain customary covenants, including limitations with respect to debt, liens, fundamental changes, asset sales, restricted payments, investments and transactions with affiliates, subject to certain exceptions. We were in compliance with all covenants under these facilities as of December 31, 2021 and 2022, as applicable.

Off-Balance Sheet Risk

In the normal course of business, we engage in activities involving settlement and financing of securities transactions. User securities transactions are recorded on a settlement date basis, which is generally two business days after the trade date for equities and one business day after the trade date for options. These activities may expose us to off-balance sheet risk in the event that the other party to the transaction is unable to fulfill its contractual obligations. In such events, we may be required to purchase financial instruments at prevailing market prices in order to fulfill our obligations.

NOTE 13: COMMON STOCK AND STOCKHOLDERS' (DEFICIT) EQUITY

Redeemable Convertible Preferred Stock

In February 2021, we authorized 244.3 million shares of Series G-1 redeemable convertible preferred stock in connection with our convertible notes. No shares of Series G-1 were issued or outstanding immediately prior to our IPO.

Immediately prior to our IPO, all outstanding shares of redeemable convertible preferred stock were converted into shares of our Class A common stock on a one-to-one basis and their carrying value of $2.18 billion was reclassified into stockholders' equity. As such, there were no shares of redeemable convertible preferred stock authorized or issued and outstanding as of December 31, 2021 and 2022.

Preferred Stock

Pursuant to our Charter, our board of directors may issue shares of our preferred stock in one or more series and, subject to the applicable law of the State of Delaware, our board of directors may set the powers, rights, preferences, qualifications, limitations and restrictions of such preferred stock. As of December 31, 2022, no terms of the preferred stock were designated, and no shares of preferred stock were outstanding.

Common Stock

Voting Rights

We have three authorized classes of common stock: Class A, Class B, and Class C. Holders of our Class A common stock are entitled to one vote per share on all matters to be voted upon by our stockholders, holders of our Class B common stock are entitled to 10 votes per share on all matters to be voted upon by our stockholders and, except as otherwise required by applicable law, holders of our Class C common stock are not entitled to vote on any matter to be voted upon by our stockholders. The holders of our Class A common stock and Class B common stock vote together as a single class, unless otherwise required by our Charter or applicable law.

Conversion of Class B Common Stock

Each share of Class B common stock is convertible at any time at the option of the holder into one share of Class A common stock. All Class B common stock will automatically convert (as a class) into Class A common stock upon the earliest of (i) the date and time specified by the affirmative vote of the holders of at least 80% of the then-outstanding shares of Class B common stock, voting separately as a class, (ii) the date fixed by our board of directors that is no less than 61 days and no more than 180 days following the date on which the number of then-outstanding shares of Class B common stock represents less than 5% of the aggregate number of shares of Class A common stock and Class B common stock then outstanding, (iii) the date fixed by our board of directors that is no less than 61 days and no more than 180 days following the date that (A) each founder is no longer providing services to our Company as an officer, employee, or consultant and (B) each founder is not a director of our Company as a result of a voluntary resignation by such founder from our board of directors or as a result of a written request or agreement by such founder not to be renominated as a director of our Company at an annual or special meeting of stockholders, (iv) nine months after the death or total disability of both founders (subject to a delay of up to 18 months as may be approved by a majority of our independent directors), or (v) August 2, 2036, the date that is 15 years from the completion of our IPO.

Shares of Class B common stock will also automatically convert into shares of Class A common stock upon sale or transfer except for certain permitted transfers described in our Charter. In addition, each share of Class B common stock held by a stockholder who is a natural person, or held by permitted transferees or permitted entities of such natural person (each as described in our Charter) will automatically convert into shares of Class A common stock nine months following the death or total disability of such natural person (subject to a delay of up to 18 months as may be approved by a majority of our independent directors). Notwithstanding the foregoing, in the event such natural person is a founder, to the extent (i) a person designated by such founder and approved by a majority of the independent directors then in office or (ii) the other founder, in each case, has or shares voting control over the shares of Class B common stock held by the deceased or disabled founder, such shares will be treated as being held of record by such person or other founder and will not convert into shares of Class A common stock as a result of such founder's death or total disability.

Conversion of Class C Common Stock

Upon the conversion or exchange of all outstanding shares of our Class B common stock into shares of Class A common stock, each outstanding share of Class C common stock will convert automatically into one share of Class A common stock on the date or time fixed by our board of directors.

Dividend Rights

Subject to the rights of any holders of our preferred stock, the holders of our common stock will be entitled to receive ratable dividends, if any, as may be declared from time to time by our board of directors out of funds legally available for the payment of dividends.

Right to Receive Liquidation Distributions

If we liquidate, dissolve or wind up, after all liabilities and, if applicable, the holders of each series of our preferred stock have been paid in full, the holders of our common stock will be entitled to share ratably in all remaining assets.

No Preemptive or Similar Rights

Our common stock has no preemptive or conversion rights or other subscription rights. No redemption or sinking fund provisions are applicable to our common stock. The rights, preferences and privileges of the holders of our common stock are subject to, and may be adversely affected by, the rights of the holders of shares of any series of our preferred stock that we may designate and issue in the future.

The convertible notes issued in February 2021 (see Note 8 - Investments and Fair Value Measurement for further information) were converted into 137.3 million shares of Class A common stock at a conversion price of $26.60 per share upon completion of our IPO.

Warrants

As of December 31, 2022, warrants outstanding consisted of warrants to purchase 14.3 million shares of Class A common stock with a strike price of $26.60 per share. The warrants expire on February 12, 2031 and can be exercised with cash or net shares settled at the holder's option. In aggregate, the maximum purchase amount of all warrants is $380 million. As of December 31, 2022, the warrants have not been exercised and are included as a component of additional paid in capital on the consolidated balance sheets.

Equity Incentive Plans

Amended and Restated 2013 Stock Plan and 2020 Equity Incentive Plan

Our Amended and Restated 2013 Stock Plan, as amended (the "2013 Plan"), and our 2020 Equity Incentive Plan, as amended (the "2020 Plan"), provided for share-based awards to eligible participants, granted as incentive stock options ("ISOs"), non-statutory stock options ("NSOs"), restricted stock units ("RSUs"), stock appreciation rights ("SARs") or restricted stock awards ("RSAs"). Our 2013 Plan was terminated in connection with adoption of our 2020 Plan, and our 2020 Plan was terminated in connection with the adoption of our 2021 Plan (defined below) but any awards outstanding under our 2013 Plan and 2020 Plan remain in effect in accordance with their terms. Any shares that were or otherwise would become available for grant under the 2013 Plan or 2020 Plan will be available for grant under the 2021 Plan. No new awards may be granted under our 2013 Plan or 2020 Plan.

2021 Omnibus Incentive Plan

Our 2021 Omnibus Incentive Plan (the "2021 Plan") became effective on July 27, 2021, and provides for the grant of share-based awards (such as options, including ISOs and NSOs, SARs, RSAs, RSUs, performance units, and other equity-based awards) and cash-based awards. Under the 2021 Plan, options could be granted with an exercise price per share not less than the fair market value at the date of grant. Options granted generally vest over a four-year term from the date of grant, at a rate of 25% after one year, then monthly on a straight-line basis thereafter. Generally, options granted are exercisable for up to ten years from the date of grant. RSUs granted generally vest quarterly on a straight-line basis and expire seven years from the date of grant.

As of December 31, 2022, an aggregate of 360 million shares had been authorized for issuance under the 2013 Plan, 2020 Plan, and 2021 Plan, of which 98 million shares had been issued under the plans, 130 million shares were reserved for issuance upon the exercise or settlement of outstanding equity awards under the plans, and 132 million shares remained available for new grants under the 2021 Plan. On January 1, 2023, an additional 44.6 million shares became available for grant under the 2021 Plan pursuant to its annual evergreen feature.

Stock Option Activity

A summary of stock option activity for the year ended December 31, 2022 is as follows:

	Number of Shares	Weighted-Average Exercise Price	Weighted-Average Remaining Life	Total Intrinsic Value *(in millions)*
Balance at December 31, 2021	14,527,468	$ 2.20	5.37	$ 226
Granted during the period	4,463,248	14.15		
Exercised during the period	(2,433,884)	2.25		
Cancelled and forfeited during the period	(1,330,736)	13.31		
Balance at December 31, 2022	15,226,096	$ 4.73	4.68	$ 72
Options vested and expected to vest at December 31, 2022	15,226,096	$ 4.73	4.68	$ 72
Options exercisable at December 31, 2022	11,841,163	$ 2.07	4.34	$ 72

The weighted-average grant date fair value of options granted during the years ended December 31, 2020 and 2022 was $3.64 and $14.15. No options were granted during 2021. The fair value of each stock option was estimated on the grant date using the Black-Scholes option pricing model with the following weighted-average assumptions:

	Year Ended December 31,		
	2020	2021	2022
Dividend yield	0 %	N/A	0 %
Risk-free interest rate	0.61 %	N/A	1.61 %
Expected volatility	36.69 %	N/A	40.72 %
Expected term (years)	6.04	N/A	4.61

The total intrinsic value of options exercised during 2020, 2021, and 2022 was $45 million, $179 million, and $25 million. The intrinsic value is calculated as the difference between the exercise price of the underlying stock option award and the market value of the stock at the time of exercise. The total grant date fair value of options that vested for each of the periods presented was immaterial.

Time-Based RSUs

We have granted Time-Based RSUs that vest upon the satisfaction of a time-based service condition ("Time-Based RSUs"). The following table summarizes the activity related to our Time-Based RSUs for the year ended December 31, 2022:

	Number of RSUs	Weighted-average grant date fair value
Unvested at December 31, 2021	49,428,070	$ 31.78
Granted	61,100,831	11.63
Vested	(25,213,252)	21.51
Forfeited	(29,198,867)	23.93
Unvested at December 31, 2022	56,116,782	$ 18.55

The fair value of Time-Based RSUs vested during 2021 and 2022 was $1,054 million and $542 million, respectively. No Time-Based RSUs vested during 2020.

Market-Based RSUs

In 2019 and 2021, we granted Market-Based RSUs to our founders under which vesting is conditioned upon both the achievement of share price targets and the continued employment by each recipient over defined service periods. There were no Market-Based RSUs granted during 2022.

As of December 31, 2022, none of the 2021 Market-Based RSUs had vested based on share price targets. In February 2023, the 2021 Market-Based RSUs (corresponding to 35.3 million unvested shares) were canceled (see Note 18 - Subsequent Events).

The following table summarizes the activity related to our Market-Based RSUs for the year ended December 31, 2022:

	Eligible to Vest[(1)]	Not Eligible to Vest[(2)]	Total Number of RSUs	Weighted-average grant date fair value
Unvested at December 31, 2021	1,267,918	57,650,926	58,918,844	$ 23.50
Granted	—	—	—	
Vested	(461,060)	—	(461,060)	
Forfeited	—	—	—	
Unvested at December 31, 2022	806,858	57,650,926	58,457,784	$ 23.50

(1) Represents RSUs that became eligible to vest upon achievement of share price targets and vest upon satisfaction of time-based service requirements.

(2) Represents RSUs that have not yet become eligible to vest because share price targets have not yet been achieved.

The fair value of Market-Based RSUs that vested during 2021 and 2022 was $161 million and $5 million . No Market-Based RSUs vested during 2020.

2021 Employee Share Purchase Plan

Our ESPP became effective on July 27, 2021 and enables eligible employees to purchase shares of our common stock at a discount through payroll deductions of up to 15% of their eligible compensation up to the statutory maximum. The purchase price is equal to 85% of the fair market value of a share of our common stock on the first date of an offering or the date of purchase, whichever is lower. The ESPP has an automatic rollover feature, whereby employees begin a new 12-month offering period if the fair value of the Company's common stock on a purchase date is less than that on the original offering date.

The aggregate number of shares reserved for issuance under the ESPP will automatically increase on the first day of each calendar year beginning on January 1, 2022 and ending with (and including) January 1, 2031. Such annual increase will be equal to the lesser of (i) 1% of the outstanding shares of all classes of our common stock on the last day of the immediately preceding calendar year and (ii) such number of shares determined by the board of directors. No more than 200 million shares of common stock may be issued under our ESPP.

In the year ended December 31, 2022, 1.9 million shares were purchased under the ESPP at a weighted-average price of $8.42. The fair value of shares to be issued under our ESPP was estimated on the grant date using the Black-Scholes option pricing model. As of December 31, 2022, approximately 25.6 million shares remained available for issuance under the ESPP. On January 1, 2023, an additional 8.9 million shares became authorized for issuance under the ESPP pursuant to its annual evergreen feature.

Share-Based Compensation

The following table presents share-based compensation in our consolidated statements of operations for the periods indicated:

	Year Ended December 31,		
(in millions)	2020	2021	2022[(1)]
General and administrative	$ 5	$ 885	$ 425
Technology and development	18	610	212
Operations	—	20	8
Brokerage and transaction	—	7	5
Marketing	1	50	4
Total	$ 24	$ 1,572	$ 654

(1) Included in the table above, we recorded share-based compensation expense of $323 million related to Market-Based RSUs, $314 million related to Time-Based RSUs, $11 million related to ESPP, and $6 million related to options for the year ended December 31, 2022.

In the year ended December 31, 2020, subsequent to the sale of our Series G redeemable convertible preferred stock, certain employees sold shares of common stock to new and existing stockholders in a tender offer (the “2020 Tender Offer”). The 2020 Tender closed on November 13, 2020, when existing employees sold 1.4 million shares of our common stock for an aggregate purchase price of $22 million. With the 2020 Tender Offer, we believe that we had established a pattern of cash settlement of immature shares and stock options only during a very discrete set of circumstances in which we opened a tender offer in conjunction with a preferred stock financing. As such, during the 2020 Tender Offer period, we recorded a liability equal to the fair value of the maximum number of options representing immature shares that could have been redeemed in the tender offer. To the extent that this liability exceeded amounts previously recognized in equity, the excess was recognized as additional share-based compensation expense. Following the closing of the 2020 Tender Offer, the remaining liability of $19 million was reclassified to additional paid-in capital. We recorded share-based compensation expense of $17 million in connection with this tender offer in the year ended December 31, 2020. Out of the $17 million expenses, $16 million related to options and $2 million related to Time-Based RSUs.

In March 2021, we modified certain Time-Based RSUs of approximately 500 employees to remove the one-year vesting cliff, considered to be an improbable to improbable modification. The modified RSUs were revalued at the modification date, and the modified grant date fair value of the awards of $39.75 per share was used to calculate share-based compensation expense.

We have capitalized share-based compensation expense related to internally developed software of $1 million, $35 million, and $28 million for years 2020, 2021, and 2022.

The April 2022 Restructuring and the August 2022 Restructuring resulted in net reductions of $24 million and $53 million in share-based compensation expense, respectively. Both reductions were substantially all related to Time-Based RSUs. The net reductions were primarily recognized in technology and development expense, $16 million and $22 million, and general and administrative expense, $6 million and $28 million.

As of December 31, 2022, there was $1.23 billion of unrecognized share-based compensation expense that is expected to be recognized over a weighted-average period of 1.99 years. Scheduled vesting for awards outstanding as of December 31, 2022, is as follows:

(in millions, except for number of shares)	Number of Shares[1]	Expense
2023	24,081,983	$ 563
2024	17,662,243	368
2025	12,342,086	247
2026	4,286,976	49
Total	58,373,288	$ 1,227

(1) Excludes future ESPP shares and Market-Based RSUs for which the share price target has not been met as we cannot forecast the vesting of these shares.

The above schedule excludes an estimate for forfeitures, which are recognized as they occur, and future equity grants.

NOTE 14: NET INCOME (LOSS) PER SHARE

We present net income (loss) per share using the two-class method required for multiple classes of common stock. The rights, including the liquidation and dividend rights, of the holders of Class A common stock and Class B common stock are identical, except with respect to voting. As the liquidation and dividend rights are identical for Class A common stock and Class B common stock, the undistributed earnings are allocated on a proportionate basis and the resulting income (loss) per share will, therefore, be the same for both Class A common stock and Class B common stock on an individual or combined basis.

The following table presents the calculation of basic and diluted income (loss) per share:

	Year Ended December 31,		
(in millions, except per share data)	2020	2021	2022
Net income (loss)	$ 7	$ (3,687)	$ (1,028)
Less: allocation of earnings to participating securities	4	—	—
Net income (loss) attributable to common stockholders	$ 3	$ (3,687)	$ (1,028)
Weighted-average common shares outstanding - basic	225,748,355	492,381,190	878,630,024
Dilutive effect of stock options and unvested shares	19,249,033	—	—
diluted loss per share	244,997,388	492,381,190	878,630,024
Net income (loss) per share attributable to common stockholders:			
Basic	$ 0.01	$ (7.49)	$ (1.17)
Diluted	$ 0.01	$ (7.49)	$ (1.17)

The following potential common shares were excluded from the calculation of diluted net income (loss) per share because their effect would have been anti-dilutive or issuance of such shares is contingent upon the satisfaction of certain conditions that were not satisfied by the end of the period:

	Year Ended December 31,		
	2020	2021	2022
Redeemable convertible preferred stock	412,742,897	—	—
RSUs	75,375,307	108,359,188	114,614,461
Stock options	60,082	14,527,468	15,226,096
Early-exercised stock options	8,423	15,126	—
Warrants	—	14,278,034	14,278,034
ESPP shares	—	246,179	364,427
Total anti-dilutive securities	488,186,709	137,425,995	144,483,018

NOTE 15: RELATED PARTY TRANSACTIONS

Related party transactions may include any transaction between entities under common control or with a related party. We have defined related parties as members of our board of directors, executive officers, principal owners of our outstanding stock, and any immediate family members of each such related party, as well as any other person or entity with significant influence over our management or operations and any other affiliates.

In 2022, we did not have any material related party transactions.

In February 2021, we issued two tranches of convertible notes and granted to each purchaser of the Tranche I convertible notes a warrant to purchase equity securities (see Note 8 - Investments and Fair Value Measurement, for further information). Two of the Tranche I investors were related parties prior to the completion of our IPO. Their respective aggregate outstanding principal and accrued interest of their convertible notes automatically converted into shares of Class A common stock upon the closing of our IPO.

NOTE 16: LEASES

Our operating leases are comprised of office facilities, with the most significant leases relating to our corporate headquarters in Menlo Park, CA and our office in New York City, NY. Our leases have remaining terms of less than one year to 10 years, and many leases include one or more options to renew. We do not assume renewals in our determination of the lease term unless the renewals are deemed to be reasonably assured at lease commencement. We do not have any finance leases. See Note 6 - Restructuring Activities, for further information relating to impacts on leases due to the April and August 2022 Restructurings.

In 2022, we executed agreements to assign some of our operating leases to third-party assignees who assumed all of our obligations, liabilities, covenants, and conditions under the assigned leases. As a result of these agreements, we derecognized the related right-of-use assets of $28 million and lease liability of $33 million and recognized an immaterial amount of net gain.

Lease assets and liabilities recognized on our consolidated balance sheets were as follows:

(in millions)	Classification	December 31, 2021	December 31, 2022
Lease Right-of-use Assets			
Operating lease assets	Other non-current assets	$ 129	$ 92
Lease Liabilities			
Current operating lease liabilities	Other current liabilities	22	21
Non-current operating lease liabilities	Other non-current liabilities	129	127
Total lease liabilities		$ 151	$ 148

Fixed operating lease costs primarily consist of monthly base rent amounts due. Variable operating lease costs primarily relate to common area maintenance, property taxes, insurance, and other operating expenses. The components of lease expense were as follows:

(in millions)	Year Ended December 31, 2020	2021	2022
Fixed operating lease costs	$ 12	$ 24	$ 33
Variable operating lease costs	3	6	7
Short-term lease costs	1	1	—
Total lease costs	$ 16	$ 31	$ 40

Other information related to our operating leases was as follows:

	December 31, 2021	December 31, 2022
Weighted-average remaining lease term	7.29 years	7.59 years
Weighted-average discount rate	6.27 %	6.52 %

Cash flows related to leases were as follows:

(in millions)	Year Ended December 31, 2020	2021	2022
Operating cash flows:			
Payments for operating lease liabilities	$ 13	$ 6	$ 23
Supplemental cash flow data:			
Lease liabilities arising from obtaining right-of-use assets	$ 26	$ 97	$ 32

Future minimum lease payments under non-cancellable operating leases (with initial lease terms in excess of one year) as of December 31, 2022 are as follows:

(in millions)	
2023	$ 30
2024	29
2025	27
2026	19
2027	17
Thereafter	68
Total undiscounted lease payments	190
Less: imputed interest	(40)
Less: lease incentives	(2)
Total lease liabilities	$ 148

NOTE 17: COMMITMENTS & CONTINGENCIES

We are subject to contingencies arising in the ordinary course of our business, including contingencies related to legal, regulatory, non-income tax and other matters. We record an accrual for loss contingencies at management's best estimate when we determine that it is probable that a loss has been incurred and the amount of the loss can be reasonably estimated. If the reasonable estimate is a range and no amount within that range is considered a better estimate than any other amount, an accrual is recorded based on the bottom amount of the range. If a loss is not probable, or a probable loss cannot be reasonably estimated, no accrual is recorded. Amounts accrued for contingencies in the aggregate were $84.8 million and $85.2 million as of December 31, 2021 and 2022. In our opinion, an adequate accrual had been made as of December 31, 2022 to provide for the probable losses of which we are aware and for which we can reasonably estimate an amount.

Legal and Regulatory Matters

The securities industry is highly regulated and many aspects of our business involve substantial risk of liability. In past years, there has been an increase in litigation and regulatory investigations involving the brokerage and cryptocurrency industries. Litigation has included and may in the future include class action suits that generally seek substantial and, in some cases, punitive damages. Federal and state regulators, exchanges, or other SROs investigate issues related to regulatory compliance that may result in enforcement action. We are also subject to periodic regulatory audits and inspections that have in the past and could in the future lead to enforcement investigations or actions.

We have been named as a defendant in lawsuits and from time to time we have been threatened with, or named as a defendant in arbitrations and administrative proceedings. The outcomes of these matters are inherently uncertain and some may result in adverse judgments or awards, including penalties, injunctions, or other relief, and we may also determine to settle a matter because of the uncertainty and risks of litigation.

With respect to matters discussed below, we believe, based on current knowledge, that any losses (in excess of amounts accrued, if applicable) as of December 31, 2022 that are reasonably possible and can be reasonably estimated will not, in the aggregate, have a material adverse effect on our business, financial position, operating results, or cash flows. However, for many of the matters disclosed below, particularly those in early stages, we cannot reasonably estimate the reasonably possible loss (or range of loss), if any. In addition, the ultimate outcome of legal proceedings involves judgments and inherent uncertainties and cannot be predicted with certainty. Any judgment entered against us, or any adverse settlement, could materially and adversely impact our business, financial condition, operating results, and cash flows. We might also incur substantial legal fees, which are expensed as incurred, in defending against legal and regulatory claims.

Described below are certain pending matters in which there is at least a reasonable possibility that a material loss could be incurred. We intend to continue to defend these matters vigorously.

Best Execution, Payment for Order Flow, and Sources of Revenue Civil Litigation

Beginning in December 2020, multiple putative securities fraud class action lawsuits were filed against RHM, RHF, and RHS. Five cases were consolidated in the United States District Court for the Northern District of California. An amended consolidated complaint was filed in May 2021, alleging violations of Section 10(b) of the Exchange Act and various state law causes of action based on claims that we violated the duty of best execution and misled putative class members by publishing misleading statements and omissions in customer communications relating to the execution of trades and revenue sources (including PFOF). Plaintiffs seek damages, restitution, disgorgement, and other relief. In February 2022, the court granted Robinhood's motion to dismiss the amended consolidated complaint without prejudice. In March 2022, plaintiffs filed a second consolidated amended complaint, alleging only violations of Section 10(b) of the Exchange Act, which Robinhood moved to dismiss. In October 2022, the court granted Robinhood's motion in part and denied it in part. In November 2022, Robinhood filed a motion for judgment on the pleadings, which the court denied in January 2023.

March 2020 Outages

A consolidated putative class action lawsuit relating to the March 2020 Outages is pending in the United States District Court for the Northern District of California. The lawsuit generally alleges that putative class members were unable to execute trades during the March 2020 Outages because our platform was inadequately designed to handle customer demand and we failed to implement appropriate backup systems. The lawsuit includes, among other things, claims for breach of contract, negligence, gross negligence, breach of fiduciary duty, unjust enrichment and violations of certain California consumer protection statutes. The lawsuit generally seeks damages, restitution, and/or disgorgement, as well as declaratory and injunctive relief. In May 2022, the parties notified the court that they had reached an agreement in principle resolving this action. The settlement agreement has been preliminarily approved by the court.

In addition, in September 2021, approximately 400 jointly-represented customers initiated an arbitration of individual claims against us arising out of the March 2020 Outages and other alleged system outages. The parties have reached an agreement to resolve this matter.

State Regulatory Matters

Certain state regulatory authorities have conducted investigations regarding RHF's options trading and related customer communications and displays, options and margin trading approval process, March 2020 platform outages, and customer support prior to June 2020. RHF has reached a settlement in principle with the Alabama Securities Commission and anticipates a potential multi-state settlement related to these issues. FINRA previously conducted an investigation and reached a settlement with RHF regarding many of these issues.

Brokerage Enforcement Matters

FINRA Enforcement staff are conducting investigations related to, among other things, RHS's reporting of fractional share trades, as applicable, to a Trade Reporting Facility ("TRF"), the Over-the-Counter Reporting Facility ("ORF"), the Order Audit Trail System ("OATS"), and the Consolidated Audit Trail ("CAT"); RHS's reporting of accounts holding significant options positions to the Large Option Position Report ("LOPR") system; processing of certain requests for transfers of assets from Robinhood through the Automated Customer Account Transfer System ("ACATS"); responses to Electronic Blue Sheets requests from FINRA; RHF's compliance with FINRA registration requirements for member personnel; marketing involving social media influencers and affiliates; and collaring the prices of certain trade orders. We are cooperating with these investigations.

RHS has received requests from the SEC Division of Enforcement regarding its compliance with Regulation SHO's trade reporting and other requirements in connection with securities lending and fractional share trading and previously received similar requests from FINRA examinations staff. RHS and RHF have also received requests from the SEC Division of Enforcement and FINRA Enforcement staff related to the Firms' compliance with recordkeeping requirements. We are cooperating with these investigations.

Robinhood Crypto Matters

RHC has received subpoenas from the California Attorney General's Office seeking information about, among other things, RHC's trading platform, business and operations, custody of customer assets, customer disclosures, and coin listings. RHC is cooperating with this investigation.

Account Takeovers, Anti-Money Laundering, and Cybersecurity Matters

FINRA Enforcement and the SEC Division of Enforcement are investigating account takeovers (i.e., circumstances under which an unauthorized actor successfully logs into a customer account), as well as anti-money laundering compliance and cybersecurity issues. The SEC's Division of Enforcement is also investigating issues related to compliance with the Electronic Funds Transfer Act. We are cooperating with these investigations.

In January 2021, Siddharth Mehta filed a putative class action in California state court against RHF and RHS, purportedly on behalf of approximately 2,000 Robinhood customers whose accounts were allegedly accessed by unauthorized users. RHF and RHS removed this action to the United States District Court for the Northern District of California. Plaintiff generally alleges that RHF and RHS breached commitments made and duties owed to customers to safeguard customer data and assets and seeks monetary damages and injunctive relief. In April 2022, the parties reached a settlement in principle to resolve this matter. The settlement agreement has been preliminarily approved by the court.

Massachusetts Securities Division Matter

In December 2020, the Enforcement Section of the Massachusetts Securities Division ("MSD") filed an administrative complaint against RHF, which stems from an investigation initiated by the MSD in July 2020. The complaint alleged three counts of Massachusetts securities law violations regarding alleged unethical and dishonest conduct or practices, failure to supervise, and failure to act in accordance with the Massachusetts fiduciary duty standard, which became effective on March 6, 2020 and had an effective enforcement date beginning September 1, 2020. Among other things, the MSD alleged that our product features and marketing strategies, outages, and options trading approval process constitute violations of Massachusetts securities laws. MSD subsequently filed an amended complaint that seeks, among other things, injunctive relief (a permanent cease and desist order), censure, restitution, disgorgement, appointment of an independent consultant, an administrative fine, and revocation of RHF's license to operate in Massachusetts. If RHF were to lose its license to operate in Massachusetts, we would not be able to acquire any new customers in Massachusetts, and we expect that our current customers in Massachusetts would be unable to continue utilizing any of the services or products offered on our platform (other than closing their positions) and that we may be forced to transfer such customers' accounts to other broker-dealers. Additionally, revocation of RHF's Massachusetts license could trigger similar disqualification or proceedings to restrict or condition RHF's registration by other state regulators. A revocation of RHF's license to operate in Massachusetts would result in RHF and RHS being subject to statutory disqualification by FINRA and the SEC, which would then result in RHF needing to obtain relief from FINRA subject to SEC review in order to remain a FINRA member and RHS possibly needing relief from FINRA or other SROs.

In April 2021, RHF filed a complaint and motion for preliminary injunction and declaratory relief in Massachusetts state court seeking to enjoin the MSD administrative proceeding and challenging the legality of the Massachusetts fiduciary duty standard. In September 2021, the parties filed cross-motions for partial judgment on the pleadings. In March 2022, the court ruled in favor of RHF, declaring that the Massachusetts fiduciary duty regulation was unlawful. The MSD is appealing the ruling. A hearing on the two remaining counts alleged by the MSD in its amended administrative complaint is currently scheduled to begin in March 2023.

Text Message Litigation

In August 2021, Cooper Moore filed a putative class action against RHF alleging that RHF initiated or assisted in the transmission of commercial electronic text messages to Washington State residents without their consent in violation of Washington state law. The complaint seeks statutory and treble damages, injunctive relief, and attorneys' fees and costs. The case is currently pending in the U.S. District Court for the Western District of Washington. RHF filed a motion to dismiss the complaint. In February 2022, Moore and Andrew Gillette filed an amended complaint, which RHF again moved to dismiss. In August 2022, the court denied RHF's motion to dismiss.

Early 2021 Trading Restrictions Matters

Beginning on January 28, 2021, due to increased deposit requirements imposed on RHS by the NSCC in response to unprecedented market volatility, particularly in certain securities, RHS temporarily restricted or limited its customers' purchase of certain securities, including GameStop Corp. and AMC Entertainment Holdings, Inc., on our platform (the "Early 2021 Trading Restrictions").

A number of individual and putative class actions related to the Early 2021 Trading Restrictions were filed against RHM, RHF, and RHS, among others, in various federal and state courts. In April 2021, the Judicial Panel on Multidistrict Litigation entered an order centralizing the federal cases identified in a motion to transfer and coordinate or consolidate the actions filed in connection with the Early 2021 Trading Restrictions in the United States District Court for the Southern District of Florida (the "MDL"). The court subsequently divided plaintiffs' claims against Robinhood into three tranches: federal antitrust claims, federal securities law claims, and state law claims. In July 2021, plaintiffs filed consolidated complaints seeking monetary damages in connection with the federal antitrust and state law tranches. The federal antitrust complaint asserted one violation of Section 1 of the Sherman Act; the state law complaint asserted negligence and breach of fiduciary duty claims. In August 2021, we moved to dismiss both of these complaints.

In September 2021, plaintiffs filed an amended complaint asserting state law claims of negligence, breach of fiduciary duty, tortious interference with contract and business relationship, civil conspiracy, and breaches of the covenant of good faith and fair dealing and implied duty of care. In January 2022, the court dismissed the state law complaint with prejudice. Plaintiffs have appealed the court's order to the United States Court of Appeals for the Eleventh Circuit.

In November 2021, the court dismissed the federal antitrust complaint without prejudice. In January 2022, plaintiffs filed an amended complaint in connection with the federal antitrust tranche and Robinhood moved to dismiss the amended complaint. In May 2022, the court dismissed the federal antitrust complaint with prejudice. Plaintiffs have appealed the court's order to the United States Court of Appeals for the Eleventh Circuit.

In November 2021, plaintiffs for the federal securities tranche filed a complaint alleging violations of Sections 9(a) and 10(b) of the Exchange Act. In January 2022, we moved to dismiss the federal securities law complaint. In August 2022, the court granted in part and denied in part Robinhood's motion to dismiss.

RHM, RHF, RHS, and our Co-Founder and CEO, Vladimir Tenev, among others, have received requests for information, and in some cases, subpoenas and requests for testimony, related to investigations and examinations of the Early 2021 Trading Restrictions from the United States Attorney's Office for the Northern District of California ("USAO"), the DOJ, Antitrust Division, the SEC's Division of Enforcement, FINRA, the New York Attorney General's Office, other state attorneys general offices, and a number of state securities regulators. Also, a related search warrant was executed by the USAO to obtain Mr. Tenev's cell phone. There have been several inquiries based on specific customer complaints. We have also received requests from the SEC Division of Enforcement and FINRA related to employee trading in certain securities that were subject to the Early 2021 Trading Restrictions, including GameStop Corp. and AMC Entertainment Holdings, Inc., during the week of January 25, 2021. These matters include requests related to whether any employee trading in these securities may have occurred after the decision to impose the Early 2021 Trading Restrictions and before the public announcement of the Early 2021 Trading Restrictions on January 28, 2021. We are cooperating with these investigations. FINRA Enforcement has also requested information about policies, procedures, and supervision related to employee trading generally.

IPO Litigation

In December 2021, Philip Golubowski filed a putative class action in the U.S. District Court for the Northern District of California against RHM, the officers and directors who signed Robinhood's IPO offering documents, and Robinhood's IPO underwriters. Plaintiff's claims are based on alleged false or misleading statements in Robinhood's IPO offering documents allegedly in violation of Sections 11 and 12(a) of the Securities Act of 1933, as amended (the "Securities Act"). Plaintiff seeks compensatory damages, rescission of shareholders' share purchases, and an award for attorneys' fees and costs. In February 2022, certain alleged Robinhood stockholders submitted applications seeking appointment by the court to be the lead plaintiff to represent the putative class in this matter, and in March 2022, the court appointed lead plaintiffs. In June 2022, plaintiffs filed an amended complaint. In August 2022, Robinhood filed a motion to dismiss the complaint. In February 2023, the court granted Robinhood's motion without prejudice.

In January 2022, Robert Zito filed a complaint derivatively on behalf of Robinhood against Robinhood's directors at the time of its IPO in the U.S. District Court for the District of Delaware. Plaintiff alleges breach of fiduciary duties, waste of corporate assets, unjust enrichment, and violations of Section 10(b) of the Exchange Act. Plaintiff's claims are based on allegations of false or misleading statements in Robinhood's IPO offering documents, and plaintiff seeks an award of damages and restitution to the Company, injunctive relief, and an award for attorney's fees and costs. In March 2022, the district court entered a stay of this litigation pending resolution of Robinhood's motion to dismiss in the Golubowski securities action discussed above.

In August 2022, a shareholder sent a letter to the RHM board of directors demanding, among other things, that the board of directors pursue causes of action on behalf of the Company related to allegations of misconduct in connection with the Early 2021 Trading Restrictions, Robinhood's IPO offering documents, and the November 2021 Data Security Incident. The Board has formed a Demand Review Committee that is reviewing the demand.

NOTE 18: SUBSEQUENT EVENTS

Termination of Ziglu Stock Purchase Agreement

On April 16, 2022, we entered into a definitive stock purchase agreement to acquire all outstanding equity of Ziglu Limited ("Ziglu"). Advances of $12 million made to Ziglu during the year were accounted for as non-marketable equity securities under the fair value alternative, considering the securities lacked a readily determinable fair value. In February 2023, we notified Ziglu of the termination of the stock purchase agreement. Due to this and other factors, we have adjusted the carrying value of our investment in Ziglu to zero as of December 31, 2022.

Market-Based RSUs Cancellation

In February 2023, we cancelled the 2021 Market-Based RSUs of 35.5 million unvested shares. We expect to recognize approximately $485 million SBC expense related to the cancellation during the first quarter of 2023. We will no longer be required to recognize any further SBC expense associated with these awards over future fiscal quarters upon the cancellation. No other payments, replacement equity awards or benefits were granted in connection with the cancellation.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURES

None.

ITEM 9A. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, has evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act) as of December 31, 2022. Based on such evaluation, our Chief Executive Officer and Chief Financial Officer concluded that, as of December 31, 2022, our disclosure controls and procedures were effective to provide reasonable assurance that information we are required to disclose in reports that we file or submit under the Exchange Act is recorded, processed, summarized, and reported within the time periods specified in the Commission’s rules and forms, and that such information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure.

Management's Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act). Internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with accounting principles generally accepted in the U.S. Our management, under the oversight of our board of directors, evaluated the effectiveness of our internal control over financial reporting as of December 31, 2022 based on the framework in Internal Control-Integrated Framework (2013), issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on this evaluation, our management concluded that our internal control over financial reporting was effective as of December 31, 2022.

Our independent registered public accounting firm, Ernst & Young LLP, who audited the Consolidated Financial Statements included in this Annual Report on Form 10-K, issued an audit report on the Company's internal control over financial reporting. That Report of Independent Registered Public Accounting Firm is included in Item 8 of this Annual Report on Form 10-K.

Changes in Internal Control Over Financial Reporting

There has been no change in our internal control over financial reporting (as defined in Rule 13a-15(f) and 15d-15(f) under the Exchange Act) during the quarter ended December 31, 2022 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Inherent Limitations on Effectiveness of Controls

Our management, including our Chief Executive Officer and Chief Financial Officer, believes that our disclosure controls and procedures and internal control over financial reporting are designed to provide reasonable assurance of achieving their objectives and are effective at the reasonable assurance level. However, management does not expect that our disclosure controls and procedures or our internal control over financial reporting will prevent or detect all errors and all fraud. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within the company have been detected. The design of any system of controls also is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions. Over time, controls may become inadequate because of changes in conditions, or the degree of compliance with the policies or procedures may deteriorate. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud might occur without being detected.

ITEM 9B. OTHER INFORMATION

Not applicable.

ITEM 9C. DISCLOSURE REGARDING FOREIGN JURISDICTIONS THAT PREVENT INSPECTIONS

Not applicable.