Form 5500

Department of the Treasury
Internal Revenue Service

Department of Labor
Employee Benefits Security Administration

Pension Benefit Guaranty Corporation

Annual Return/Report of Employee Benefit Plan

This form is required to be filed for employee benefit plans under sections 104 and 4065 of the Employee Retirement Income Security Act of 1974 (ERISA) and sections 6057(b) and 6058(a) of the Internal Revenue Code (the Code).

▶ **Complete all entries in accordance with the instructions to the Form 5500.**

OMB Nos. 1210-0110
1210-0089

2019

This Form is Open to Public Inspection

Part I Annual Report Identification Information

For calendar plan year 2019 or fiscal plan year beginning 01/01/2019 and ending 12/31/2019

A This return/report is for:
- ☐ a multiemployer plan
- ☐ a multiple-employer plan (Filers checking this box must attach a list of participating employer information in accordance with the form instructions.)
- ☒ a single-employer plan
- ☐ a DFE (specify) ____

B This return/report is:
- ☐ the first return/report
- ☐ the final return/report
- ☐ an amended return/report
- ☐ a short plan year return/report (less than 12 months)

C If the plan is a collectively-bargained plan, check here. . . . . ▶ ☐

D Check box if filing under:
- ☒ Form 5558
- ☐ automatic extension
- ☐ the DFVC program
- ☐ special extension (enter description)

Part II Basic Plan Information—enter all requested information

1a Name of plan
TWO SIGMA 401(K) PLAN

1b Three-digit plan number (PN) ▶ 001

1c Effective date of plan 01/01/2001

2a Plan sponsor's name (employer, if for a single-employer plan)
Mailing address (include room, apt., suite no. and street, or P.O. Box)
City or town, state or province, country, and ZIP or foreign postal code (if foreign, see instructions)
TWO SIGMA INVESTMENTS, LP

100 AVENUE OF THE AMERICAS
16TH FLOOR
NEW YORK, NY 10013

2b Employer Identification Number (EIN)
13-4181471

2c Plan Sponsor's telephone number
212-625-5700

2d Business code (see instructions)
523900

Caution: A penalty for the late or incomplete filing of this return/report will be assessed unless reasonable cause is established.

Under penalties of perjury and other penalties set forth in the instructions, I declare that I have examined this return/report, including accompanying schedules, statements and attachments, as well as the electronic version of this return/report, and to the best of my knowledge and belief, it is true, correct, and complete.

SIGN HERE	Filed with authorized/valid electronic signature.	10/12/2020	JONATHAN HITCHON
	Signature of plan administrator	Date	Enter name of individual signing as plan administrator
SIGN HERE			
	Signature of employer/plan sponsor	Date	Enter name of individual signing as employer or plan sponsor
SIGN HERE			
	Signature of DFE	Date	Enter name of individual signing as DFE

3a Plan administrator's name and address [X] Same as Plan Sponsor	**3b** Administrator's EIN	
	3c Administrator's telephone number	
4 If the name and/or EIN of the plan sponsor or the plan name has changed since the last return/report filed for this plan, enter the plan sponsor's name, EIN, the plan name and the plan number from the last return/report: **a** Sponsor's name **c** Plan Name	**4b** EIN **4d** PN	
5 Total number of participants at the beginning of the plan year	**5**	1758
6 Number of participants as of the end of the plan year unless otherwise stated (welfare plans complete only lines **6a(1), 6a(2), 6b, 6c,** and **6d**).		
a(1) Total number of active participants at the beginning of the plan year	**6a(1)**	1493
a(2) Total number of active participants at the end of the plan year	**6a(2)**	1644
b Retired or separated participants receiving benefits	**6b**	0
c Other retired or separated participants entitled to future benefits	**6c**	338
d Subtotal. Add lines **6a(2)**, **6b**, and **6c**	**6d**	1982
e Deceased participants whose beneficiaries are receiving or are entitled to receive benefits.	**6e**	0
f Total. Add lines **6d** and **6e**.	**6f**	1982
g Number of participants with account balances as of the end of the plan year (only defined contribution plans complete this item)	**6g**	1912
h Number of participants who terminated employment during the plan year with accrued benefits that were less than 100% vested	**6h**	81
7 Enter the total number of employers obligated to contribute to the plan (only multiemployer plans complete this item)	**7**	

8a If the plan provides pension benefits, enter the applicable pension feature codes from the List of Plan Characteristics Codes in the instructions:

2E 2F 2G 2J 2K 2T 3D 3H

b If the plan provides welfare benefits, enter the applicable welfare feature codes from the List of Plan Characteristics Codes in the instructions:

9a Plan funding arrangement (check all that apply)		**9b** Plan benefit arrangement (check all that apply)	
(1)	[ ] Insurance	**(1)**	[ ] Insurance
(2)	[ ] Code section 412(e)(3) insurance contracts	**(2)**	[ ] Code section 412(e)(3) insurance contracts
(3)	[X] Trust	**(3)**	[X] Trust
(4)	[ ] General assets of the sponsor	**(4)**	[ ] General assets of the sponsor

10 Check all applicable boxes in 10a and 10b to indicate which schedules are attached, and, where indicated, enter the number attached. (See instructions)

a Pension Schedules

- **(1)** [X] **R** (Retirement Plan Information)
- **(2)** [ ] **MB** (Multiemployer Defined Benefit Plan and Certain Money Purchase Plan Actuarial Information) - signed by the plan actuary
- **(3)** [ ] **SB** (Single-Employer Defined Benefit Plan Actuarial Information) - signed by the plan actuary

b General Schedules

- **(1)** [X] **H** (Financial Information)
- **(2)** [ ] **I** (Financial Information – Small Plan)
- **(3)** [ ] ___ **A** (Insurance Information)
- **(4)** [X] **C** (Service Provider Information)
- **(5)** [ ] **D** (DFE/Participating Plan Information)
- **(6)** [ ] **G** (Financial Transaction Schedules)

Part III Form M-1 Compliance Information (to be completed by welfare benefit plans)

11a If the plan provides welfare benefits, was the plan subject to the Form M-1 filing requirements during the plan year? (See instructions and 29 CFR 2520.101-2.) ..... ☐ Yes ☐ No

If "Yes" is checked, complete lines 11b and 11c.

11b Is the plan currently in compliance with the Form M-1 filing requirements? (See instructions and 29 CFR 2520.101-2.) ..... ☐ Yes ☐ No

11c Enter the Receipt Confirmation Code for the 2019 Form M-1 annual report. If the plan was not required to file the 2019 Form M-1 annual report, enter the Receipt Confirmation Code for the most recent Form M-1 that was required to be filed under the Form M-1 filing requirements. (Failure to enter a valid Receipt Confirmation Code will subject the Form 5500 filing to rejection as incomplete.)

Receipt Confirmation Code_____

SCHEDULE C (Form 5500)	Service Provider Information	OMB No. 1210-0110
Department of the Treasury Internal Revenue Service Department of Labor Employee Benefits Security Administration Pension Benefit Guaranty Corporation	This schedule is required to be filed under section 104 of the Employee Retirement Income Security Act of 1974 (ERISA). ▶ **File as an attachment to Form 5500.**	**2019** **This Form is Open to Public Inspection.**

For calendar plan year 2019 or fiscal plan year beginning 01/01/2019 and ending 12/31/2019

A Name of plan
TWO SIGMA 401(K) PLAN

B Three-digit plan number (PN) ▶ 001

C Plan sponsor's name as shown on line 2a of Form 5500
TWO SIGMA INVESTMENTS, LP

D Employer Identification Number (EIN)
13-4181471

Part I Service Provider Information (see instructions)

You must complete this Part, in accordance with the instructions, to report the information required for **each person** who received, directly or indirectly, $5,000 or more in total compensation (i.e., money or anything else of monetary value) in connection with services rendered to the plan or the person's position with the plan during the plan year. If a person received **only** eligible indirect compensation for which the plan received the required disclosures, you are required to answer line 1 but are not required to include that person when completing the remainder of this Part.

1 Information on Persons Receiving Only Eligible Indirect Compensation

a Check "Yes" or "No" to indicate whether you are excluding a person from the remainder of this Part because they received only eligible indirect compensation for which the plan received the required disclosures (see instructions for definitions and conditions).. . . . . [X] Yes [ ] No

b If you answered line 1a "Yes," enter the name and EIN or address of each person providing the required disclosures for the service providers who received only eligible indirect compensation. Complete as many entries as needed (see instructions).

(b) Enter name and EIN or address of person who provided you disclosures on eligible indirect compensation

FIDELITY INVESTMENTS INSTITUTIONAL

04-2647786

(b) Enter name and EIN or address of person who provided you disclosures on eligible indirect compensation

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2. Information on Other Service Providers Receiving Direct or Indirect Compensation. Except for those persons for whom you answered "Yes" to line 1a above, complete as many entries as needed to list each person receiving, directly or indirectly, $5,000 or more in total compensation (i.e., money or anything else of value) in connection with services rendered to the plan or their position with the plan during the plan year. (See instructions).

(a) Enter name and EIN or address (see instructions)

STRATEGIC ADVISORS, INC.

04-2654524

(b) Service Code(s)	(c) Relationship to employer, employee organization, or person known to be a party-in-interest	(d) Enter direct compensation paid by the plan. If none, enter -0-.	(e) Did service provider receive indirect compensation? (sources other than plan or plan sponsor)	(f) Did indirect compensation include eligible indirect compensation, for which the plan received the required disclosures?	(g) Enter total indirect compensation received by service provider excluding eligible indirect compensation for which you answered "Yes" to element (f). If none, enter -0-.	(h) Did the service provider give you a formula instead of an amount or estimated amount?
27	ADVISOR	45077	Yes [ ] No [X]	Yes [ ] No [ ]		Yes [ ] No [ ]

(a) Enter name and EIN or address (see instructions)

FIDELITY INVESTMENTS INSTITUTIONAL

04-2647786

(b) Service Code(s)	(c) Relationship to employer, employee organization, or person known to be a party-in-interest	(d) Enter direct compensation paid by the plan. If none, enter -0-.	(e) Did service provider receive indirect compensation? (sources other than plan or plan sponsor)	(f) Did indirect compensation include eligible indirect compensation, for which the plan received the required disclosures?	(g) Enter total indirect compensation received by service provider excluding eligible indirect compensation for which you answered "Yes" to element (f). If none, enter -0-.	(h) Did the service provider give you a formula instead of an amount or estimated amount?
37 60 64 65	RECORDKEEPER	3800	Yes [X] No [ ]	Yes [X] No [ ]	0	Yes [X] No [ ]

(a) Enter name and EIN or address (see instructions)

(b) Service Code(s)	(c) Relationship to employer, employee organization, or person known to be a party-in-interest	(d) Enter direct compensation paid by the plan. If none, enter -0-.	(e) Did service provider receive indirect compensation? (sources other than plan or plan sponsor)	(f) Did indirect compensation include eligible indirect compensation, for which the plan received the required disclosures?	(g) Enter total indirect compensation received by service provider excluding eligible indirect compensation for which you answered "Yes" to element (f). If none, enter -0-.	(h) Did the service provider give you a formula instead of an amount or estimated amount?
			Yes [ ] No [ ]	Yes [ ] No [ ]		Yes [ ] No [ ]

2. Information on Other Service Providers Receiving Direct or Indirect Compensation. Except for those persons for whom you answered "Yes" to line 1a above, complete as many entries as needed to list each person receiving, directly or indirectly, $5,000 or more in total compensation (i.e., money or anything else of value) in connection with services rendered to the plan or their position with the plan during the plan year. (See instructions).

(a) Enter name and EIN or address (see instructions)

(b) Service Code(s)	**(c)** Relationship to employer, employee organization, or person known to be a party-in-interest	**(d)** Enter direct compensation paid by the plan. If none, enter -0-.	**(e)** Did service provider receive indirect compensation? (sources other than plan or plan sponsor)	**(f)** Did indirect compensation include eligible indirect compensation, for which the plan received the required disclosures?	**(g)** Enter total indirect compensation received by service provider excluding eligible indirect compensation for which you answered "Yes" to element (f). If none, enter -0-.	**(h)** Did the service provider give you a formula instead of an amount or estimated amount?
			Yes ☐ No ☐	Yes ☐ No ☐		Yes ☐ No ☐

(a) Enter name and EIN or address (see instructions)

(b) Service Code(s)	**(c)** Relationship to employer, employee organization, or person known to be a party-in-interest	**(d)** Enter direct compensation paid by the plan. If none, enter -0-.	**(e)** Did service provider receive indirect compensation? (sources other than plan or plan sponsor)	**(f)** Did indirect compensation include eligible indirect compensation, for which the plan received the required disclosures?	**(g)** Enter total indirect compensation received by service provider excluding eligible indirect compensation for which you answered "Yes" to element (f). If none, enter -0-.	**(h)** Did the service provider give you a formula instead of an amount or estimated amount?
			Yes ☐ No ☐	Yes ☐ No ☐		Yes ☐ No ☐

(a) Enter name and EIN or address (see instructions)

(b) Service Code(s)	**(c)** Relationship to employer, employee organization, or person known to be a party-in-interest	**(d)** Enter direct compensation paid by the plan. If none, enter -0-.	**(e)** Did service provider receive indirect compensation? (sources other than plan or plan sponsor)	**(f)** Did indirect compensation include eligible indirect compensation, for which the plan received the required disclosures?	**(g)** Enter total indirect compensation received by service provider excluding eligible indirect compensation for which you answered "Yes" to element (f). If none, enter -0-.	**(h)** Did the service provider give you a formula instead of an amount or estimated amount?
			Yes ☐ No ☐	Yes ☐ No ☐		Yes ☐ No ☐

Part I Service Provider Information (continued)

3. If you reported on line 2 receipt of indirect compensation, other than eligible indirect compensation, by a service provider, and the service provider is a fiduciary or provides contract administrator, consulting, custodial, investment advisory, investment management, broker, or recordkeeping services, answer the following questions for (a) each source from whom the service provider received $1,000 or more in indirect compensation and (b) each source for whom the service provider gave you a formula used to determine the indirect compensation instead of an amount or estimated amount of the indirect compensation. Complete as many entries as needed to report the required information for each source.

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
FIDELITY INVESTMENTS INSTITUTIONAL	60	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
COL SM CAP INDEX I2 - COLUMBIA MGT 52-2269240	0.10%

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
FIDELITY INVESTMENTS INSTITUTIONAL	60	0

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.
TRP EQUITY INCOME - T. ROWE PRICE 52-2269240	0.15%

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation

(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.

Part II Service Providers Who Fail or Refuse to Provide Information

4 Provide, to the extent possible, the following information for each service provider who failed or refused to provide the information necessary to complete this Schedule.

(a) Enter name and EIN or address of service provider (see instructions)	**(b)** Nature of Service Code(s)	**(c)** Describe the information that the service provider failed or refused to provide

(a) Enter name and EIN or address of service provider (see instructions)	**(b)** Nature of Service Code(s)	**(c)** Describe the information that the service provider failed or refused to provide

(a) Enter name and EIN or address of service provider (see instructions)	**(b)** Nature of Service Code(s)	**(c)** Describe the information that the service provider failed or refused to provide

(a) Enter name and EIN or address of service provider (see instructions)	**(b)** Nature of Service Code(s)	**(c)** Describe the information that the service provider failed or refused to provide

(a) Enter name and EIN or address of service provider (see instructions)	**(b)** Nature of Service Code(s)	**(c)** Describe the information that the service provider failed or refused to provide

(a) Enter name and EIN or address of service provider (see instructions)	**(b)** Nature of Service Code(s)	**(c)** Describe the information that the service provider failed or refused to provide

Part III Termination Information on Accountants and Enrolled Actuaries (see instructions)

(complete as many entries as needed)

a Name:	**b** EIN:
c Position:	
d Address:	**e** Telephone:

Explanation:

a Name:	**b** EIN:
c Position:	
d Address:	**e** Telephone:

Explanation:

a Name:	**b** EIN:
c Position:	
d Address:	**e** Telephone:

Explanation:

a Name:	**b** EIN:
c Position:	
d Address:	**e** Telephone:

Explanation:

a Name:	**b** EIN:
c Position:	
d Address:	**e** Telephone:

Explanation:

SCHEDULE H (Form 5500)

Department of the Treasury
Internal Revenue Service

Department of Labor
Employee Benefits Security Administration

Pension Benefit Guaranty Corporation

Financial Information

This schedule is required to be filed under section 104 of the Employee Retirement Income Security Act of 1974 (ERISA), and section 6058(a) of the Internal Revenue Code (the Code).

▶ **File as an attachment to Form 5500.**

OMB No. 1210-0110

2019

This Form is Open to Public Inspection

For calendar plan year 2019 or fiscal plan year beginning 01/01/2019 and ending 12/31/2019

A Name of plan
TWO SIGMA 401(K) PLAN

B Three-digit plan number (PN) ▶ 001

C Plan sponsor's name as shown on line 2a of Form 5500
TWO SIGMA INVESTMENTS, LP

D Employer Identification Number (EIN)
13-4181471

Part I Asset and Liability Statement

1 Current value of plan assets and liabilities at the beginning and end of the plan year. Combine the value of plan assets held in more than one trust. Report the value of the plan's interest in a commingled fund containing the assets of more than one plan on a line-by-line basis unless the value is reportable on lines 1c(9) through 1c(14). Do not enter the value of that portion of an insurance contract which guarantees, during this plan year, to pay a specific dollar benefit at a future date. **Round off amounts to the nearest dollar.** MTIAs, CCTs, PSAs, and 103-12 IEs do not complete lines 1b(1), 1b(2), 1c(8), 1g, 1h, and 1i. CCTs, PSAs, and 103-12 IEs also do not complete lines 1d and 1e. See instructions.

Assets		(a) Beginning of Year	(b) End of Year
a Total noninterest-bearing cash	1a	0	0
b Receivables (less allowance for doubtful accounts):			
(1) Employer contributions	1b(1)	0	0
(2) Participant contributions	1b(2)	0	0
(3) Other	1b(3)	0	0
c General investments:			
(1) Interest-bearing cash (include money market accounts & certificates of deposit)	1c(1)	12682081	14477355
(2) U.S. Government securities	1c(2)	0	0
(3) Corporate debt instruments (other than employer securities):			
(A) Preferred	1c(3)(A)	0	0
(B) All other	1c(3)(B)	0	0
(4) Corporate stocks (other than employer securities):			
(A) Preferred	1c(4)(A)	0	0
(B) Common	1c(4)(B)	0	0
(5) Partnership/joint venture interests	1c(5)	0	0
(6) Real estate (other than employer real property)	1c(6)	0	0
(7) Loans (other than to participants)	1c(7)	0	0
(8) Participant loans	1c(8)	982750	1328643
(9) Value of interest in common/collective trusts	1c(9)	0	0
(10) Value of interest in pooled separate accounts	1c(10)	0	0
(11) Value of interest in master trust investment accounts	1c(11)	0	0
(12) Value of interest in 103-12 investment entities	1c(12)	0	0
(13) Value of interest in registered investment companies (e.g., mutual funds)	1c(13)	185176040	272998674
(14) Value of funds held in insurance company general account (unallocated contracts)	1c(14)		
(15) Other	1c(15)	0	0

			(a) Beginning of Year	(b) End of Year
1d	Employer-related investments:			
	(1) Employer securities	**1d(1)**	0	0
	(2) Employer real property	**1d(2)**	0	0
e	Buildings and other property used in plan operation	**1e**	0	0
f	Total assets (add all amounts in lines 1a through 1e)	**1f**	198840871	288804672
	Liabilities			
g	Benefit claims payable	**1g**	0	0
h	Operating payables	**1h**	0	0
i	Acquisition indebtedness	**1i**	0	0
j	Other liabilities	**1j**	0	0
k	Total liabilities (add all amounts in lines 1g through1j)	**1k**	0	0
	Net Assets			
l	Net assets (subtract line 1k from line 1f)	**1l**	198840871	288804672

Part II Income and Expense Statement

2 Plan income, expenses, and changes in net assets for the year. Include all income and expenses of the plan, including any trust(s) or separately maintained fund(s) and any payments/receipts to/from insurance carriers. Round off amounts to the nearest dollar. MTIAs, CCTs, PSAs, and 103-12 IEs do not complete lines 2a, 2b(1)(E), 2e, 2f, and 2g.

	Income		(a) Amount	(b) Total
a	**Contributions:**			
	(1) Received or receivable in cash from: **(A)** Employers	**2a(1)(A)**	7613239	
	(B) Participants	**2a(1)(B)**	36024356	
	(C) Others (including rollovers)	**2a(1)(C)**	11209013	
	(2) Noncash contributions	**2a(2)**	0	
	(3) Total contributions. Add lines **2a(1)(A), (B), (C),** and line **2a(2)**	**2a(3)**		54846608
b	**Earnings on investments:**			
	(1) Interest:			
	(A) Interest-bearing cash (including money market accounts and certificates of deposit)	**2b(1)(A)**	236447	
	(B) U.S. Government securities	**2b(1)(B)**	0	
	(C) Corporate debt instruments	**2b(1)(C)**	0	
	(D) Loans (other than to participants)	**2b(1)(D)**	0	
	(E) Participant loans	**2b(1)(E)**	56448	
	(F) Other	**2b(1)(F)**	0	
	(G) Total interest. Add lines **2b(1)(A)** through **(F)**	**2b(1)(G)**		292895
	(2) Dividends: **(A)** Preferred stock	**2b(2)(A)**	0	
	(B) Common stock	**2b(2)(B)**	0	
	(C) Registered investment company shares (e.g. mutual funds)	**2b(2)(C)**	17199974	
	(D) Total dividends. Add lines **2b(2)(A)**, **(B)**, and **(C)**	**2b(2)(D)**		17199974
	(3) Rents	**2b(3)**		0
	(4) Net gain (loss) on sale of assets: **(A)** Aggregate proceeds	**2b(4)(A)**	0	
	(B) Aggregate carrying amount (see instructions)	**2b(4)(B)**	0	
	(C) Subtract line **2b(4)(B)** from line **2b(4)(A)** and enter result	**2b(4)(C)**		0
	(5) Unrealized appreciation (depreciation) of assets: **(A)** Real estate	**2b(5)(A)**	0	
	(B) Other	**2b(5)(B)**	0	
	(C) Total unrealized appreciation of assets. Add lines **2b(5)(A)** and **(B)**	**2b(5)(C)**		0

		(a) Amount	(b) Total
(6) Net investment gain (loss) from common/collective trusts	2b(6)		0
(7) Net investment gain (loss) from pooled separate accounts	2b(7)		0
(8) Net investment gain (loss) from master trust investment accounts	2b(8)		0
(9) Net investment gain (loss) from 103-12 investment entities	2b(9)		0
(10) Net investment gain (loss) from registered investment companies (e.g., mutual funds)	2b(10)		35141702
c Other income	2c		0
d Total income. Add all **income** amounts in column (b) and enter total	2d		107481179
Expenses			
e Benefit payment and payments to provide benefits:			
(1) Directly to participants or beneficiaries, including direct rollovers	2e(1)	17434985	
(2) To insurance carriers for the provision of benefits	2e(2)	0	
(3) Other	2e(3)	0	
(4) Total benefit payments. Add lines **2e(1)** through **(3)**	2e(4)		17434985
f Corrective distributions (see instructions)	2f		33243
g Certain deemed distributions of participant loans (see instructions)	2g		0
h Interest expense	2h		0
i Administrative expenses: **(1)** Professional fees	2i(1)	0	
(2) Contract administrator fees	2i(2)	0	
(3) Investment advisory and management fees	2i(3)	45077	
(4) Other	2i(4)	4073	
(5) Total administrative expenses. Add lines **2i(1)** through **(4)**	2i(5)		49150
j Total expenses. Add all **expense** amounts in column (b) and enter total	2j		17517378
Net Income and Reconciliation			
k Net income (loss). Subtract line **2j** from line **2d**	2k		89963801
l Transfers of assets:			
(1) To this plan	2l(1)		0
(2) From this plan	2l(2)		

Part III Accountant's Opinion

3 Complete lines 3a through 3c if the opinion of an independent qualified public accountant is attached to this Form 5500. Complete line 3d if an opinion is not attached.

a The attached opinion of an independent qualified public accountant for this plan is (see instructions):

(1) [X] Unmodified **(2)** [ ] Qualified **(3)** [ ] Disclaimer **(4)** [ ] Adverse

b Did the accountant perform a limited scope audit pursuant to 29 CFR 2520.103-8 and/or 103-12(d)? [ ] Yes [X] No

c Enter the name and EIN of the accountant (or accounting firm) below:

(1) Name: ERNST & YOUNG, LLP **(2)** EIN: 34-6565596

d The opinion of an independent qualified public accountant is **not attached** because:

(1) [ ] This form is filed for a CCT, PSA, or MTIA. **(2)** [ ] It will be attached to the next Form 5500 pursuant to 29 CFR 2520.104-50.

Part IV Compliance Questions

4 CCTs and PSAs do not complete Part IV. MTIAs, 103-12 IEs, and GIAs do not complete lines 4a, 4e, 4f, 4g, 4h, 4k, 4m, 4n, or 5. 103-12 IEs also do not complete lines 4j and 4l. MTIAs also do not complete line 4l.

During the plan year:

		Yes	No	Amount
a Was there a failure to transmit to the plan any participant contributions within the time period described in 29 CFR 2510.3-102? Continue to answer "Yes" for any prior year failures until fully corrected. (See instructions and DOL's Voluntary Fiduciary Correction Program.)	4a		X	
b Were any loans by the plan or fixed income obligations due the plan in default as of the close of the plan year or classified during the year as uncollectible? Disregard participant loans secured by participant's account balance. (Attach Schedule G (Form 5500) Part I if "Yes" is checked.)	4b		X	

			Yes	No	Amount
c	Were any leases to which the plan was a party in default or classified during the year as uncollectible? (Attach Schedule G (Form 5500) Part II if "Yes" is checked.)	4c		X	
d	Were there any nonexempt transactions with any party-in-interest? (Do not include transactions reported on line 4a. Attach Schedule G (Form 5500) Part III if "Yes" is checked.)	4d		X	
e	Was this plan covered by a fidelity bond?	4e	X		1000000
f	Did the plan have a loss, whether or not reimbursed by the plan's fidelity bond, that was caused by fraud or dishonesty?	4f		X	
g	Did the plan hold any assets whose current value was neither readily determinable on an established market nor set by an independent third party appraiser?	4g		X	
h	Did the plan receive any noncash contributions whose value was neither readily determinable on an established market nor set by an independent third party appraiser?	4h		X	
i	Did the plan have assets held for investment? (Attach schedule(s) of assets if "Yes" is checked, and see instructions for format requirements.)	4i	X		
j	Were any plan transactions or series of transactions in excess of 5% of the current value of plan assets? (Attach schedule of transactions if "Yes" is checked, and see instructions for format requirements.)	4j		X	
k	Were all the plan assets either distributed to participants or beneficiaries, transferred to another plan, or brought under the control of the PBGC?	4k		X	
l	Has the plan failed to provide any benefit when due under the plan?	4l		X	
m	If this is an individual account plan, was there a blackout period? (See instructions and 29 CFR 2520.101-3.)	4m		X	
n	If 4m was answered "Yes," check the "Yes" box if you either provided the required notice or one of the exceptions to providing the notice applied under 29 CFR 2520.101-3.	4n		X	

5a Has a resolution to terminate the plan been adopted during the plan year or any prior plan year? ☐ Yes ☒ No
If "Yes," enter the amount of any plan assets that reverted to the employer this year _____.

5b If, during this plan year, any assets or liabilities were transferred from this plan to another plan(s), identify the plan(s) to which assets or liabilities were transferred. (See instructions.)

5b(1) Name of plan(s)	**5b(2)** EIN(s)	**5b(3)** PN(s)

5c If the plan is a defined benefit plan, is it covered under the PBGC insurance program (See ERISA section 4021.)? ..... ☐ Yes ☐ No ☐ Not determined
If "Yes" is checked, enter the My PAA confirmation number from the PBGC premium filing for this plan year_____. (See instructions.)

SCHEDULE R (Form 5500)

Department of the Treasury
Internal Revenue Service

Department of Labor
Employee Benefits Security Administration

Pension Benefit Guaranty Corporation

Retirement Plan Information

This schedule is required to be filed under sections 104 and 4065 of the Employee Retirement Income Security Act of 1974 (ERISA) and section 6058(a) of the Internal Revenue Code (the Code).

▶ **File as an attachment to Form 5500.**

OMB No. 1210-0110

2019

This Form is Open to Public Inspection.

For calendar plan year 2019 or fiscal plan year beginning 01/01/2019 and ending 12/31/2019

A Name of plan
TWO SIGMA 401(K) PLAN

B Three-digit plan number (PN) ▶ 001

C Plan sponsor's name as shown on line 2a of Form 5500
TWO SIGMA INVESTMENTS, LP

D Employer Identification Number (EIN)
13-4181471

Part I Distributions

All references to distributions relate only to payments of benefits during the plan year.

1 Total value of distributions paid in property other than in cash or the forms of property specified in the instructions **1**

2 Enter the EIN(s) of payor(s) who paid benefits on behalf of the plan to participants or beneficiaries during the year (if more than two, enter EINs of the two payors who paid the greatest dollar amounts of benefits):

EIN(s): 04-6568107

Profit-sharing plans, ESOPs, and stock bonus plans, skip line 3.

3 Number of participants (living or deceased) whose benefits were distributed in a single sum, during the plan year **3**

Part II Funding Information (If the plan is not subject to the minimum funding requirements of section 412 of the Internal Revenue Code or ERISA section 302, skip this Part.)

4 Is the plan administrator making an election under Code section 412(d)(2) or ERISA section 302(d)(2)? ..... ☐ **Yes** ☐ **No** ☐ **N/A**

If the plan is a defined benefit plan, go to line 8.

5 If a waiver of the minimum funding standard for a prior year is being amortized in this plan year, see instructions and enter the date of the ruling letter granting the waiver. **Date:** Month _____ Day _____ Year _____

If you completed line 5, complete lines 3, 9, and 10 of Schedule MB and do not complete the remainder of this schedule.

6 **a** Enter the minimum required contribution for this plan year (include any prior year accumulated funding deficiency not waived) **6a**

b Enter the amount contributed by the employer to the plan for this plan year **6b**

c Subtract the amount in line 6b from the amount in line 6a. Enter the result (enter a minus sign to the left of a negative amount) **6c**

If you completed line 6c, skip lines 8 and 9.

7 Will the minimum funding amount reported on line 6c be met by the funding deadline? ..... ☐ **Yes** ☐ **No** ☐ **N/A**

8 If a change in actuarial cost method was made for this plan year pursuant to a revenue procedure or other authority providing automatic approval for the change or a class ruling letter, does the plan sponsor or plan administrator agree with the change? ..... ☐ **Yes** ☐ **No** ☐ **N/A**

Part III Amendments

9 If this is a defined benefit pension plan, were any amendments adopted during this plan year that increased or decreased the value of benefits? If yes, check the appropriate box. If no, check the "No" box. ..... ☐ **Increase** ☐ **Decrease** ☐ **Both** ☐ **No**

Part IV ESOPs (see instructions). If this is not a plan described under section 409(a) or 4975(e)(7) of the Internal Revenue Code, skip this Part.

10 Were unallocated employer securities or proceeds from the sale of unallocated securities used to repay any exempt loan? ..... ☐ **Yes** ☐ **No**

11 **a** Does the ESOP hold any preferred stock? ..... ☐ **Yes** ☐ **No**

b If the ESOP has an outstanding exempt loan with the employer as lender, is such loan part of a "back-to-back" loan? (See instructions for definition of "back-to-back" loan.) ..... ☐ **Yes** ☐ **No**

12 Does the ESOP hold any stock that is not readily tradable on an established securities market? ..... ☐ **Yes** ☐ **No**

Part V Additional Information for Multiemployer Defined Benefit Pension Plans

13 Enter the following information for each employer that contributed more than 5% of total contributions to the plan during the plan year (measured in dollars). See instructions. *Complete as many entries as needed to report all applicable employers.*

a Name of contributing employer

b EIN **c** Dollar amount contributed by employer

d Date collective bargaining agreement expires *(If employer contributes under more than one collective bargaining agreement, check box* ☐ *and see instructions regarding required attachment. Otherwise, enter the applicable date.)* Month _____ Day _____ Year _____

e Contribution rate information *(If more than one rate applies, check this box* ☐ *and see instructions regarding required attachment. Otherwise, complete lines 13e(1) and 13e(2).)*
(1) Contribution rate (in dollars and cents) _____
(2) Base unit measure: ☐ Hourly ☐ Weekly ☐ Unit of production ☐ Other (specify):

---

a Name of contributing employer

b EIN **c** Dollar amount contributed by employer

d Date collective bargaining agreement expires *(If employer contributes under more than one collective bargaining agreement, check box* ☐ *and see instructions regarding required attachment. Otherwise, enter the applicable date.)* Month _____ Day _____ Year _____

e Contribution rate information *(If more than one rate applies, check this box* ☐ *and see instructions regarding required attachment. Otherwise, complete lines 13e(1) and 13e(2).)*
(1) Contribution rate (in dollars and cents) _____
(2) Base unit measure: ☐ Hourly ☐ Weekly ☐ Unit of production ☐ Other (specify): _____

---

a Name of contributing employer

b EIN **c** Dollar amount contributed by employer

d Date collective bargaining agreement expires *(If employer contributes under more than one collective bargaining agreement, check box* ☐ *and see instructions regarding required attachment. Otherwise, enter the applicable date.)* Month _____ Day _____ Year _____

e Contribution rate information *(If more than one rate applies, check this box* ☐ *and see instructions regarding required attachment. Otherwise, complete lines 13e(1) and 13e(2).)*
(1) Contribution rate (in dollars and cents) _____
(2) Base unit measure: ☐ Hourly ☐ Weekly ☐ Unit of production ☐ Other (specify): _____

---

a Name of contributing employer

b EIN **c** Dollar amount contributed by employer

d Date collective bargaining agreement expires *(If employer contributes under more than one collective bargaining agreement, check box* ☐ *and see instructions regarding required attachment. Otherwise, enter the applicable date.)* Month _____ Day _____ Year _____

e Contribution rate information *(If more than one rate applies, check this box* ☐ *and see instructions regarding required attachment. Otherwise, complete lines 13e(1) and 13e(2).)*
(1) Contribution rate (in dollars and cents) _____
(2) Base unit measure: ☐ Hourly ☐ Weekly ☐ Unit of production ☐ Other (specify): _____

---

a Name of contributing employer

b EIN **c** Dollar amount contributed by employer

d Date collective bargaining agreement expires *(If employer contributes under more than one collective bargaining agreement, check box* ☐ *and see instructions regarding required attachment. Otherwise, enter the applicable date.)* Month _____ Day _____ Year _____

e Contribution rate information *(If more than one rate applies, check this box* ☐ *and see instructions regarding required attachment. Otherwise, complete lines 13e(1) and 13e(2).)*
(1) Contribution rate (in dollars and cents) _____
(2) Base unit measure: ☐ Hourly ☐ Weekly ☐ Unit of production ☐ Other (specify): _____

---

a Name of contributing employer

b EIN **c** Dollar amount contributed by employer

d Date collective bargaining agreement expires *(If employer contributes under more than one collective bargaining agreement, check box* ☐ *and see instructions regarding required attachment. Otherwise, enter the applicable date.)* Month _____ Day _____ Year _____

e Contribution rate information *(If more than one rate applies, check this box* ☐ *and see instructions regarding required attachment. Otherwise, complete lines 13e(1) and 13e(2).)*
(1) Contribution rate (in dollars and cents) _____
(2) Base unit measure: ☐ Hourly ☐ Weekly ☐ Unit of production ☐ Other (specify): _____

14 Enter the number of participants on whose behalf no contributions were made by an employer as an employer of the participant for:

a The current year	**14a**	
b The plan year immediately preceding the current plan year	**14b**	
c The second preceding plan year	**14c**	

15 Enter the ratio of the number of participants under the plan on whose behalf no employer had an obligation to make an employer contribution during the current plan year to:

a The corresponding number for the plan year immediately preceding the current plan year	**15a**	
b The corresponding number for the second preceding plan year	**15b**	

16 Information with respect to any employers who withdrew from the plan during the preceding plan year:

a Enter the number of employers who withdrew during the preceding plan year	**16a**	
b If line 16a is greater than 0, enter the aggregate amount of withdrawal liability assessed or estimated to be assessed against such withdrawn employers	**16b**	

17 If assets and liabilities from another plan have been transferred to or merged with this plan during the plan year, check box and see instructions regarding supplemental information to be included as an attachment. ☐

Part VI Additional Information for Single-Employer and Multiemployer Defined Benefit Pension Plans

18 If any liabilities to participants or their beneficiaries under the plan as of the end of the plan year consist (in whole or in part) of liabilities to such participants and beneficiaries under two or more pension plans as of immediately before such plan year, check box and see instructions regarding supplemental information to be included as an attachment ☐

19 If the total number of participants is 1,000 or more, complete lines (a) through (c)

a Enter the percentage of plan assets held as:
Stock: _____% Investment-Grade Debt: _____% High-Yield Debt: _____% Real Estate: _____% Other: _____%

b Provide the average duration of the combined investment-grade and high-yield debt:
☐ 0-3 years ☐ 3-6 years ☐ 6-9 years ☐ 9-12 years ☐ 12-15 years ☐ 15-18 years ☐ 18-21 years ☐ 21 years or more

c What duration measure was used to calculate line 19(b)?
☐ Effective duration ☐ Macaulay duration ☐ Modified duration ☐ Other (specify):

20 **PBGC missed contribution reporting requirements.** If this is a multiemployer plan or a single-employer plan that is not covered by PBGC, skip line 20.

a Is the amount of unpaid minimum required contributions for all years from Schedule SB (Form 5500) line 40 greater than zero? ☐ Yes ☐ No

b If line 20a is "Yes," has PBGC been notified as required by ERISA sections 4043(c)(5) and/or 303(k)(4)? Check the applicable box:

☐ Yes.

☐ No. Reporting was waived under 29 CFR 4043.25(c)(2) because contributions equal to or exceeding the unpaid minimum required contribution were made by the 30th day after the due date.

☐ No. The 30-day period referenced in 29 CFR 4043.25(c)(2) has not yet ended, and the sponsor intends to make a contribution equal to or exceeding the unpaid minimum required contribution by the 30th day after the due date.

☐ No. Other. Provide explanation_____

FINANCIAL STATEMENTS AND SUPPLEMENTAL SCHEDULE

Two Sigma 401(k) Plan
December 31, 2019 and 2018
and Years Ended December 31, 2019 and 2018
With Report of Independent Auditors

Two Sigma 401(k) Plan

Financial Statements
and Supplemental Schedule

December 31, 2019 and 2018
and Years Ended December 31, 2019 and 2018

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Building a better working world

Report of Independent Auditors

The Plan Administrator
Two Sigma 401(k) Plan

We have audited the accompanying financial statements of Two Sigma 401(k) Plan, which comprise the statements of net assets available for benefits as of December 31, 2019 and 2018, and the related statements of changes in net assets available for benefits for the years then ended, and the related notes to the financial statements.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in conformity with U.S. generally accepted accounting principles; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free of material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Building a better working world

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the net assets available for benefits of Two Sigma 401(k) Plan at December 31, 2019 and 2018, and the changes in its net assets available for benefits for the years then ended, in conformity with U.S. generally accepted accounting principles.

Supplemental Schedule

Our audits were conducted for the purpose of forming an opinion on the financial statements as a whole. The accompanying supplemental schedule of assets (held at end of year) as of December 31, 2019 is presented for purposes of additional analysis and is not a required part of the financial statements but is supplementary information required by the Department of Labor's Rules and Regulations for Reporting and Disclosure under the Employee Retirement Income Security Act of 1974. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the financial statements. The information has been subjected to the auditing procedures applied in the audits of the financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the financial statements or to the financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States. In our opinion, the information is fairly stated, in all material respects, in relation to the financial statements as a whole.

Ernst & Young LLP

August 12, 2020

Two Sigma 401(k) Plan

Statements of Net Assets Available for Plan Benefits

	December 31	
	2019	**2018**
Assets		
Investments, at fair value:		
Registered investment funds	$272,998,674	$185,176,040
Registered money market fund	14,477,355	12,682,081
Total investments	287,476,029	197,858,121
Notes receivable from participants	1,328,643	982,750
Net assets available for plan benefits	$288,804,672	$198,840,871

See accompanying notes to the financial statements.

Two Sigma 401(k) Plan

Statements of Changes in Net Assets Available for Plan Benefits

	Years Ended December 31	
	2019	**2018**
Additions:		
Net realized and unrealized appreciation/(depreciation) in fair value of investments	$ 35,141,701	$ (23,766,258)
Interest and dividends	17,492,868	9,431,018
	52,634,569	(14,335,240)
Contributions:		
Employee contributions	36,024,356	29,621,191
Employee rollovers	11,209,013	8,121,126
Employer contributions	7,613,241	6,785,759
	54,846,610	44,528,076
Total additions	107,481,179	30,192,836
Deductions:		
Benefits paid to participants	(17,468,228)	(11,720,171)
Participant transaction expenses	(49,150)	(30,850)
Total deductions	(17,517,378)	(11,751,021)
Net increase in net assets available for plan benefits	89,963,801	18,441,815
Net assets available for plan benefits:		
Beginning of year	198,840,871	180,399,056
End of year	$288,804,672	$198,840,871

See accompanying notes to the financial statements.

Two Sigma 401(k) Plan

Notes to Financial Statements

December 31, 2019

1. Description of the Plan

The following description of the Two Sigma 401(k) Plan (the "Plan") is provided for general information purposes only. Participants should refer to the Basic Plan Document for more complete information. Terms used in this description have the same meaning as in the Plan document. A Plan year commences on January 1 and ends on December 31 ("Plan Year").

General

The Plan is a defined contribution plan covering substantially all full-time employees (the "Participants" or individually the "Participant") who are employed by Two Sigma Investments, LP ("TSI"), Two Sigma Solutions, LLC, a participating wholly-owned subsidiary of TSI and effective as of October 8, 2018, Two Sigma Insurance Quantified, LP, an affiliate of TSI. TSI is the Plan Sponsor and administrator ("Plan Sponsor"). The Plan is subject to the provisions of the Employee Retirement Income Security Act of 1974 ("ERISA"). Effective October 22, 2019, NFP Retirement, Inc. was engaged to provide certain investment advisory services for which TSI pays a quarterly fee in the amount of $15,000.

The Plan Sponsor designated a 401(k) committee (the "Committee"). The purpose of the Committee is to provide oversight on: investment options and performance for the Plan, service provider performance, Plan expenses, and compliance with Plan documents and ERISA, including any interpretive decisions required relating to the Plan.

Eligibility and Participation

Full-time employees are eligible to participate as described in the Plan. A full-time employee becomes eligible to participate in the Plan on the first day of the month subsequent to the date of hire.

Plan Administration

The Plan Sponsor has assigned all operating and recordkeeping responsibilities of the Plan to Fidelity Management Trust Company, which acts as the Plan's trustee, third party administrator, and custodian (the "Trustee").

1. Description of the Plan (continued)

Contributions

Each year, Participants may make pre-tax elective contributions to the Plan in any amount up to 90% of their combined salary, bonuses, overtime and all other cash compensation paid during a Plan Year, subject to the Internal Revenue Service ("IRS") limitations. Employee contributions were limited by the IRS to a maximum of $19,000 and $18,500 per year for 2019 and 2018, respectively. For employees age 50 or older, the IRS allowed an additional contribution of up to $6,000 per year for both 2019 and 2018. For the years ended December 31, 2019 and 2018, Participants contributed $22,532,696 and $18,976,579 in pre-tax elective contributions, respectively.

TSI made qualified matching contributions equal to 100% of each Participant's contribution that is not in excess of $5,000. Only Participants that are not "Non-Access Employees" are eligible for this match. Non-Access Employees are defined as employees who do not have unsupervised access to TSI's physical space or electronic systems. These amounts are included in employer contributions on the Statements of Changes in Net Assets Available for Plan Benefits. For the years ended December 31, 2019 and 2018, TSI contributed $7,613,241 and $6,785,759 in qualified matching contributions, respectively.

The Plan provides a "rollover" provision for new employees receiving distributions from a qualified plan of a former employer. These amounts are included in employee rollovers on the Statements of Changes in Net Assets Available for Plan Benefits. For the years ended December 31, 2019 and 2018, Participants contributed $10,367,383 and $7,355,091 for rollovers and $30,016 and $110,865 for post-tax rollovers, respectively.

The Plan includes a Roth elective deferral option based on the requirements provided by Section 402A of the Internal Revenue Code (the "Code"). The Roth elective deferral option permits Participants to make post-tax salary deferral contributions by payroll deduction, subject to the Participants' Roth elective deferrals combined with their pretax deferrals not exceeding the lesser of 90% of their compensation or certain limitations. For the years ended December 31, 2019 and 2018, Participants deferred $2,756,430 and $2,275,384 in Roth contributions, respectively. For the years ended December 31, 2019 and 2018, Participants contributed $811,614 and $655,170 in Roth rollovers, respectively. These amounts are included in employee contributions and employee rollovers on the Statements of Changes in Net Assets Available for Plan Benefits, respectively.

1. Description of the Plan (continued)

The Plan includes a non-deductible post-tax contribution option which permits Participants to make post-tax salary deferral contributions by payroll deduction, subject to the Participants' deferrals, employer match and employee post-tax deferrals not exceeding $56,000 and $55,000 for the year ended December 31, 2019 and 2018 respectively. For the years ended December 31, 2019 and 2018, Participants deferred $10,735,230 and $8,369,228 in post-tax deferrals, respectively. These amounts are included in employee contributions on the Statements of Changes in Net Assets Available for Plan Benefits.

Participant Accounts

Individual accounts are maintained for each Participant of the Plan. Each Participant's account is credited with the Participant's contributions and matching employer contributions as allowed for under the Plan. A Participant may direct contributions to each or any of the Plan's investment options and may exchange existing account balances among the Plan's investment options. Daily, each Participant account is increased or decreased with his or her proportionate share of the increase or decrease in the fair market value of his or her directed investment accounts, as defined in the Plan document. Each Participant is entitled to the benefit provided from the vested portion of his or her account. The Plan Sponsor's contributions are invested in the same manner as that of the participant's elective contributions.

Vesting

Participants are immediately vested in their contributions plus actual earnings thereon. Vesting in the Plan Sponsor contribution portion of their accounts plus actual earnings thereon is based on years of continuous service. A Participant vests in equal 25% installments for each year of credited services, and is 100% vested on the entire balance and any future matches after four years of credited services.

1. Description of the Plan (continued)

Notes Receivable from Participants

Participants may borrow from their fund accounts a minimum of $1,000 up to a maximum equal to the lesser of $50,000 or 50% of their vested account balance. Loan terms may not extend beyond five years from the date of the loan unless such loan is for the purchase of a primary residence, in which case the loan repayment period may not extend beyond 10 years from the date of the loan. A Participant may only have one loan outstanding at any point in time. Each Participant's loan is secured by the balance in the Participant's account, reduces the Participant's invested amounts, and bears interest at a rate determined by the Plan Sponsor. Principal and interest must be repaid in level payments through after-tax payroll deductions on at least a quarterly basis. In the event of default, death, disability or termination of employment, the entire outstanding principal and accrued interest shall be immediately due and payable.

The Plan Sponsor shall consider a loan in default if any scheduled repayment remains unpaid as of the last business day of the calendar quarter following the calendar quarter in which a loan is initially considered past due. Any default in repayment to the Plan will result in treating the balance due for the loan as a distributable event from the Plan. If a distributable event occurs as defined by the Code, the Participant will be deemed to have received a taxable distribution from the Plan. These amounts are included in benefits paid to participants in the Statements of Net Assets Available for Plan Benefits.

Interest income on the loan balance is reinvested into the investments based on Participant elections. Participant loans are measured at their unpaid principal balance plus any accrued and unpaid interest and classified as notes receivable from participants on the Statements of Net Assets Available for Plan Benefits. Interest income earned on notes receivable from participants is recorded on the accrual basis. The total amounts of the interest earned on loan balances during 2019 and 2018 were $56,448 and $49,654, respectively, and are included in interest and dividends in the accompanying Statements of Changes in Net Assets Available for Plan Benefits.

Payment of Benefits

On termination of service due to death, disability, retirement or termination of employment, a Participant or his or her beneficiaries may elect to receive a lump sum distribution equal to the vested value of the Participant's account.

1. Description of the Plan (continued)

Distributions under the Plan shall be made consistent with the provisions of Section 401(a)(9) of the Code and all treasury regulations promulgated under that Section. In the event of financial hardship, a Participant may apply to the Plan Sponsor to receive a distribution from his or her account up to an amount not to exceed the Participant's pre-tax or post-tax contributions to the Plan, subject to a $500 minimum amount. Hardship withdrawals are strictly regulated by the IRS and a Participant must exhaust all available loan options and available distributions prior to requesting a hardship withdrawal. A Participant who has attained the age of 59½ shall be entitled to receive a distribution of all or a portion of the vested value of his or her account. Hardship withdrawals totaled $129,224 for the year ended December 31, 2019.

Break in Service

A Participant who terminates employment after participating in the Plan and is subsequently re-employed after completing one hour of service shall be eligible to become a Participant of the Plan upon enrollment in accordance with the Plan guidelines. If the Participant returns within five years, the Participant's prior service will again count toward vesting, and the non-vested portion of the Participant's benefit which the Participant lost when the Participant terminated employment will be reinstated. During 2019, one Participant was re-employed and incurred a 5 year break in service.

Forfeitures

Forfeitures represent non-vested employer contribution amounts forfeited by Participants. Forfeitures are first used to reduce Plan-related administrative expenses with any remaining amounts used to reduce future Plan Sponsor contributions. Please see additional information in Note 4.

Plan Termination

Although it has not expressed any intention to do so, the Plan Sponsor has the right under the Plan to terminate the Plan subject to the provisions set forth in ERISA. In the event of Plan termination, Participants will become 100% vested in their total account balance under the Plan.

1. Description of the Plan (continued)

Participant Transaction Expenses and Other Fees

To the extent permitted by law, Plan expenses associated with the administration of the Plan are paid by the Plan, unless the expenses are paid by the Plan Sponsor, pursuant to the terms of the Plan. Administrative expenses paid by the Plan may include recordkeeping and trustee fees (none for the years ended December 31, 2019 and 2018). Loan set up fees and other administrative fees, if any, are charged to each Participant's account and are included in participant transaction expenses on the Statements of Changes in Net Assets Available for Plan Benefits.

2. Summary of Significant Accounting Policies

Basis of Accounting

The accompanying financial statements have been prepared in accordance with accounting principles generally accepted in the United States ("US GAAP").

The preparation of financial statements in conformity with US GAAP requires the Plan Sponsor to make estimates and assumptions that affect the reported amounts in the financial statements. The Plan Sponsor believes that the estimates utilized in preparing the financial statements are reasonable. Actual results could differ from these estimates.

Investment Valuation and Income Recognition

The Plan's investments are stated at fair value. 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 (an exit price). Shares of registered investment funds and registered money market funds held by the Plan at year end are valued at quoted market prices, which represent the net asset value reported by such registered investment companies. Purchases and sales of securities are recorded on a trade-date basis. Interest income on investments is recorded on an accrual basis. Dividends are recorded on the ex-dividend date. Net realized and unrealized appreciation/(depreciation) in fair value of investments includes the Plan's gains and losses on investments bought and sold as well as held during the year. See Note 3 for further discussion and disclosures related to fair value measurements.

The Trustee revalues the Plan's investments at the close of each business day based on the changes in the net asset values reported by the registered investment companies and any other fluctuation of market prices of the investments. Accordingly, changes to investments for each Participant will be reflected in each Participant's account on a daily basis.

2. Summary of Significant Accounting Policies (continued)

Benefits Paid to Participants

Benefit payments to participants are recorded upon distribution. Benefits paid to participants on the Statements of Changes in Net Assets Available for Plan Benefits include $9,652,951 and $5,409,600 for 2019 and 2018, respectively, of transfers requested by participants of their account balances to other non-Two Sigma related qualified plans or accounts.

Risks and Uncertainties

The Plan invests in various investment securities, in particular through its investment funds. Investment securities are exposed to various risks such as interest rate, market and credit risks. Due to the level of risk associated with certain investment securities, it is at least reasonably possible that changes in the values of investment securities will occur in the near term and that such changes could materially affect Participants' account balances and the amounts reported in the Statements of Net Assets Available for Plan Benefits.

New Accounting Pronouncements

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At December 31, 2019 and 2018, Plan investments are classified and disclosed in one of the following categories based on market price observability. Market price observability is impacted by a number of factors, including the type of investment and the characteristics specific to the investment. Investments with readily available quoted prices or for which fair value can be measured from actively quoted prices generally will have a higher degree of market price observability and a lesser degree of judgment used in measuring fair value:

Level I – Quoted prices are available in active markets as of the reporting date. The type of investments which would generally be included in Level I include registered investment and money market funds, listed equities, certain bonds and other exchange-traded investments.

3. Fair Value Measurement (continued)

Level II – Pricing inputs are other than quoted prices in active markets, which are either directly or indirectly observable as of the reporting date, and fair value is determined through the use of models or quotations received from brokers and other external pricing vendors.

Level III – Pricing inputs are unobservable for the investment and include situations where there is little, if any, market activity for the investment. The inputs into the determination of fair value require significant management judgment or estimation.

The following table summarizes the Plan's portfolio investments that were accounted for at fair value by level within the fair value hierarchy:

Total investments at fair value at December 31, 2019:

	Level I	Level II	Level III	Total
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Registered money market fund	14,477,355	–	–	14,477,355
Total registered investments	$287,476,029	$ –	$ –	$287,476,029

Total investments at fair value at December 31, 2018:

	Level I	Level II	Level III	Total
Registered investment funds	$185,176,040	$ –	$ –	$185,176,040
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Total registered investments	$197,858,121	$ –	$ –	$197,858,121

4. Forfeitures

During 2019 and 2018, forfeited non-vested amounts totaled $396,845 and $338,209, respectively. Total forfeitures of $405,378 and $333,870 in 2019 and 2018, respectively, were used to offset employer contributions as the Plan had no administrative expenses to offset, other than those paid directly by the Plan Sponsor. Forfeitures of $41,374 and $63,648 still remained to offset future employer contributions at December 31, 2019 and 2018, respectively.

5. Related-Party Transactions

Certain Plan investments are shares of mutual funds or money market funds managed by the Trustee. These transactions qualify as permitted party-in-interest transactions; however, they are exempt from prohibited transactions under ERISA.

In the normal course of business certain officers and employees of the Plan Sponsor (who may also be Participants in the Plan) perform administrative services related to the Plan's operation, recordkeeping and financial reporting. The Plan Sponsor pays these individuals' salaries and also pays for a portion of other administrative expenses on the Plan's behalf.

The foregoing transactions are not deemed prohibited party-in-interest transactions, because they are covered by statutory and administrative exemptions from the Code and ERISA's rules on prohibited transactions.

6. Tax Status

By Adoption Agreement dated February 29, 2016, the Plan adopted a volume submitter defined contribution plan, effective February 1, 2016. The underlying volume submitter plan has received an advisory letter from the IRS dated March 31, 2014, stating that the form of the plan is qualified under Section 401 of the Code and, therefore, the related trust is tax-exempt. The plan administrator has determined that it is eligible to, and has chosen to, rely on the current IRS volume submitter advisory letter. Once qualified, the Plan is required to operate in conformity with the Code to maintain its qualified status. The plan administrator believes the Plan is being operated in compliance with the applicable requirements of the Code and, therefore, believes the Plan is qualified and the related trust is tax-exempt.

US GAAP requires plan management to evaluate tax positions taken by the Plan and recognize a tax liability if the Plan has taken an uncertain position that more likely than not would not be sustained upon examination by the IRS. Plan management has analyzed the tax positions taken by the Plan, and has concluded that there are no uncertain positions taken or expected to be taken. The Plan is subject to routine audits by taxing jurisdictions; however, there are currently no audits for any tax periods in progress.

7. Subsequent Events

The Plan Sponsor has evaluated subsequent events through August 12, 2020, the date the financial statements were available to be issued. There are no subsequent events which require disclosure, other than the events described below.

Subsequent to December 31, 2019, there was a global outbreak of a novel coronavirus disease ("COVID-19"), which the World Health Organization declared a "Public Health Emergency of International Concern." The outbreak of COVID-19 continues to adversely affect global commercial activity and has contributed to significant volatility in the financial markets. Because the values of the Plan's individual investments have and will fluctuate in response to changing market conditions, the amount of losses that will be recognized in subsequent periods, if any, and related impact on the Plan's liquidity cannot be determined at this time.

On March 27, 2020, the Coronavirus Aid, Relief and Economic Security ("CARES") Act was enacted and signed into law. The CARES Act provides immediate and temporary relief for retirement plan sponsors and their participants with respect to employer contributions, distributions and participant loans. The provisions of the CARES Act may be effective and operationalized immediately, prior to amending the plan document. Plan management has adopted certain relief provisions included in the CARES Act and continues to evaluate other provisions.

Supplemental Schedule

Two Sigma 401(k) Plan

EIN #13-4181471 Plan #001

Schedule H, Line 4(i) – Schedule of Assets (Held at End of Year)

December 31, 2019

Identity of Issue, Borrower, Lessor or Similar Party	Shares	Fair Value
Registered Investment Funds		
Fidelity 500 Index Fund*	539,940	$ 60,484,074
Fidelity Freedom Index 2050 Fund - Class W*	2,183,670	41,446,067
Fidelity Freedom Index 2040 Fund - Class W*	1,300,210	23,754,834
Fidelity Extended Market Index Fund*	195,131	12,701,057
Fidelity Select Technology Portfolio*	598,157	11,903,321
Fidelity U.S. Bond Index Fund*	998,424	11,891,231
Fidelity Freedom Index 2030 Fund - Class W*	500,513	8,558,769
Conestoga Small Cap Fund Investors Class	138,963	8,372,502
Fidelity Freedom Index 2060 Fund - Class W*	621,103	8,186,133
Fidelity Global ex U.S. Index Fund*	596,611	7,988,615
Fidelity Capital Appreciation Fund - Class K*	233,150	7,913,118
Fidelity Balanced Fund - Class K*	307,339	7,560,537
Neuberger Berman Genesis R6	126,641	7,398,385
Fidelity Real Estate Investment Portfolio*	149,306	6,708,318
Fidelity Pacific Basin Fund*	175,907	6,074,077
Fidelity Leveraged Company Stock Fund - Class K*	175,581	5,715,162
Invesco Developing Markets R6	142,066	5,452,498
T. Rowe Price Equity Income Fund	165,030	5,295,800
PIMCO High Yield Fund Institutional Class	535,512	4,841,031
Fidelity Europe*	98,834	3,582,723
Fidelity Select Natural Resources Portfolio*	114,950	3,042,727
Fidelity Emerging Markets Index Fund*	254,046	2,789,424
BlackRock Inflation Protected Bond Fund BlackRock Shares	248,772	2,649,420
Columbia Small Cap Index Fund Institutional 2 Class	103,483	2,502,217
T. Rowe Price Small-Cap Value Fund	48,490	2,322,205
Templeton Global Bond R6	199,970	2,133,677
Fidelity Freedom Index 2020 Fund - Class W*	103,886	1,548,940
Fidelity Freedom Index Income Fund - Investor Class*	15,317	181,812
Total registered investment funds		272,998,674
Registered Money Market Funds		
Fidelity Government Money Market Fund*	14,477,355	14,477,355
Notes Receivable From Participants		
Notes receivable from participants (varying maturity dates between 2020 and 2030 and interest rate of 5.00%-5.75%) *		1,328,643
Total		$ 288,804,672

**Permitted party-in-interest.*

Note: Cost information is not required for participant directed investments. All investments are participant directed, and therefore cost information is not included.

FINANCIAL STATEMENTS AND SUPPLEMENTAL SCHEDULE

Two Sigma 401(k) Plan
December 31, 2019 and 2018
and Years Ended December 31, 2019 and 2018
With Report of Independent Auditors

Two Sigma 401(k) Plan

Financial Statements
and Supplemental Schedule

December 31, 2019 and 2018
and Years Ended December 31, 2019 and 2018

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Building a better working world

Report of Independent Auditors

The Plan Administrator
Two Sigma 401(k) Plan

We have audited the accompanying financial statements of Two Sigma 401(k) Plan, which comprise the statements of net assets available for benefits as of December 31, 2019 and 2018, and the related statements of changes in net assets available for benefits for the years then ended, and the related notes to the financial statements.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in conformity with U.S. generally accepted accounting principles; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free of material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Building a better working world

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the net assets available for benefits of Two Sigma 401(k) Plan at December 31, 2019 and 2018, and the changes in its net assets available for benefits for the years then ended, in conformity with U.S. generally accepted accounting principles.

Supplemental Schedule

Our audits were conducted for the purpose of forming an opinion on the financial statements as a whole. The accompanying supplemental schedule of assets (held at end of year) as of December 31, 2019 is presented for purposes of additional analysis and is not a required part of the financial statements but is supplementary information required by the Department of Labor's Rules and Regulations for Reporting and Disclosure under the Employee Retirement Income Security Act of 1974. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the financial statements. The information has been subjected to the auditing procedures applied in the audits of the financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the financial statements or to the financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States. In our opinion, the information is fairly stated, in all material respects, in relation to the financial statements as a whole.

Ernst & Young LLP

August 12, 2020

Two Sigma 401(k) Plan

Statements of Net Assets Available for Plan Benefits

	December 31	
	2019	**2018**
Assets		
Investments, at fair value:		
Registered investment funds	$272,998,674	$185,176,040
Registered money market fund	14,477,355	12,682,081
Total investments	287,476,029	197,858,121
Notes receivable from participants	1,328,643	982,750
Net assets available for plan benefits	$288,804,672	$198,840,871

See accompanying notes to the financial statements.

Two Sigma 401(k) Plan

Statements of Changes in Net Assets Available for Plan Benefits

	Years Ended December 31	
	2019	**2018**
Additions:		
Net realized and unrealized appreciation/(depreciation) in fair value of investments	$ 35,141,701	$ (23,766,258)
Interest and dividends	17,492,868	9,431,018
	52,634,569	(14,335,240)
Contributions:		
Employee contributions	36,024,356	29,621,191
Employee rollovers	11,209,013	8,121,126
Employer contributions	7,613,241	6,785,759
	54,846,610	44,528,076
Total additions	107,481,179	30,192,836
Deductions:		
Benefits paid to participants	(17,468,228)	(11,720,171)
Participant transaction expenses	(49,150)	(30,850)
Total deductions	(17,517,378)	(11,751,021)
Net increase in net assets available for plan benefits	89,963,801	18,441,815
Net assets available for plan benefits:		
Beginning of year	198,840,871	180,399,056
End of year	$288,804,672	$198,840,871

See accompanying notes to the financial statements.

Two Sigma 401(k) Plan

Notes to Financial Statements

December 31, 2019

1. Description of the Plan

The following description of the Two Sigma 401(k) Plan (the "Plan") is provided for general information purposes only. Participants should refer to the Basic Plan Document for more complete information. Terms used in this description have the same meaning as in the Plan document. A Plan year commences on January 1 and ends on December 31 ("Plan Year").

General

The Plan is a defined contribution plan covering substantially all full-time employees (the "Participants" or individually the "Participant") who are employed by Two Sigma Investments, LP ("TSI"), Two Sigma Solutions, LLC, a participating wholly-owned subsidiary of TSI and effective as of October 8, 2018, Two Sigma Insurance Quantified, LP, an affiliate of TSI. TSI is the Plan Sponsor and administrator ("Plan Sponsor"). The Plan is subject to the provisions of the Employee Retirement Income Security Act of 1974 ("ERISA"). Effective October 22, 2019, NFP Retirement, Inc. was engaged to provide certain investment advisory services for which TSI pays a quarterly fee in the amount of $15,000.

The Plan Sponsor designated a 401(k) committee (the "Committee"). The purpose of the Committee is to provide oversight on: investment options and performance for the Plan, service provider performance, Plan expenses, and compliance with Plan documents and ERISA, including any interpretive decisions required relating to the Plan.

Eligibility and Participation

Full-time employees are eligible to participate as described in the Plan. A full-time employee becomes eligible to participate in the Plan on the first day of the month subsequent to the date of hire.

Plan Administration

The Plan Sponsor has assigned all operating and recordkeeping responsibilities of the Plan to Fidelity Management Trust Company, which acts as the Plan's trustee, third party administrator, and custodian (the "Trustee").

1. Description of the Plan (continued)

Contributions

Each year, Participants may make pre-tax elective contributions to the Plan in any amount up to 90% of their combined salary, bonuses, overtime and all other cash compensation paid during a Plan Year, subject to the Internal Revenue Service ("IRS") limitations. Employee contributions were limited by the IRS to a maximum of $19,000 and $18,500 per year for 2019 and 2018, respectively. For employees age 50 or older, the IRS allowed an additional contribution of up to $6,000 per year for both 2019 and 2018. For the years ended December 31, 2019 and 2018, Participants contributed $22,532,696 and $18,976,579 in pre-tax elective contributions, respectively.

TSI made qualified matching contributions equal to 100% of each Participant's contribution that is not in excess of $5,000. Only Participants that are not "Non-Access Employees" are eligible for this match. Non-Access Employees are defined as employees who do not have unsupervised access to TSI's physical space or electronic systems. These amounts are included in employer contributions on the Statements of Changes in Net Assets Available for Plan Benefits. For the years ended December 31, 2019 and 2018, TSI contributed $7,613,241 and $6,785,759 in qualified matching contributions, respectively.

The Plan provides a "rollover" provision for new employees receiving distributions from a qualified plan of a former employer. These amounts are included in employee rollovers on the Statements of Changes in Net Assets Available for Plan Benefits. For the years ended December 31, 2019 and 2018, Participants contributed $10,367,383 and $7,355,091 for rollovers and $30,016 and $110,865 for post-tax rollovers, respectively.

The Plan includes a Roth elective deferral option based on the requirements provided by Section 402A of the Internal Revenue Code (the "Code"). The Roth elective deferral option permits Participants to make post-tax salary deferral contributions by payroll deduction, subject to the Participants' Roth elective deferrals combined with their pretax deferrals not exceeding the lesser of 90% of their compensation or certain limitations. For the years ended December 31, 2019 and 2018, Participants deferred $2,756,430 and $2,275,384 in Roth contributions, respectively. For the years ended December 31, 2019 and 2018, Participants contributed $811,614 and $655,170 in Roth rollovers, respectively. These amounts are included in employee contributions and employee rollovers on the Statements of Changes in Net Assets Available for Plan Benefits, respectively.

1. Description of the Plan (continued)

The Plan includes a non-deductible post-tax contribution option which permits Participants to make post-tax salary deferral contributions by payroll deduction, subject to the Participants' deferrals, employer match and employee post-tax deferrals not exceeding $56,000 and $55,000 for the year ended December 31, 2019 and 2018 respectively. For the years ended December 31, 2019 and 2018, Participants deferred $10,735,230 and $8,369,228 in post-tax deferrals, respectively. These amounts are included in employee contributions on the Statements of Changes in Net Assets Available for Plan Benefits.

Participant Accounts

Individual accounts are maintained for each Participant of the Plan. Each Participant's account is credited with the Participant's contributions and matching employer contributions as allowed for under the Plan. A Participant may direct contributions to each or any of the Plan's investment options and may exchange existing account balances among the Plan's investment options. Daily, each Participant account is increased or decreased with his or her proportionate share of the increase or decrease in the fair market value of his or her directed investment accounts, as defined in the Plan document. Each Participant is entitled to the benefit provided from the vested portion of his or her account. The Plan Sponsor's contributions are invested in the same manner as that of the participant's elective contributions.

Vesting

Participants are immediately vested in their contributions plus actual earnings thereon. Vesting in the Plan Sponsor contribution portion of their accounts plus actual earnings thereon is based on years of continuous service. A Participant vests in equal 25% installments for each year of credited services, and is 100% vested on the entire balance and any future matches after four years of credited services.

1. Description of the Plan (continued)

Notes Receivable from Participants

Participants may borrow from their fund accounts a minimum of $1,000 up to a maximum equal to the lesser of $50,000 or 50% of their vested account balance. Loan terms may not extend beyond five years from the date of the loan unless such loan is for the purchase of a primary residence, in which case the loan repayment period may not extend beyond 10 years from the date of the loan. A Participant may only have one loan outstanding at any point in time. Each Participant's loan is secured by the balance in the Participant's account, reduces the Participant's invested amounts, and bears interest at a rate determined by the Plan Sponsor. Principal and interest must be repaid in level payments through after-tax payroll deductions on at least a quarterly basis. In the event of default, death, disability or termination of employment, the entire outstanding principal and accrued interest shall be immediately due and payable.

The Plan Sponsor shall consider a loan in default if any scheduled repayment remains unpaid as of the last business day of the calendar quarter following the calendar quarter in which a loan is initially considered past due. Any default in repayment to the Plan will result in treating the balance due for the loan as a distributable event from the Plan. If a distributable event occurs as defined by the Code, the Participant will be deemed to have received a taxable distribution from the Plan. These amounts are included in benefits paid to participants in the Statements of Net Assets Available for Plan Benefits.

Interest income on the loan balance is reinvested into the investments based on Participant elections. Participant loans are measured at their unpaid principal balance plus any accrued and unpaid interest and classified as notes receivable from participants on the Statements of Net Assets Available for Plan Benefits. Interest income earned on notes receivable from participants is recorded on the accrual basis. The total amounts of the interest earned on loan balances during 2019 and 2018 were $56,448 and $49,654, respectively, and are included in interest and dividends in the accompanying Statements of Changes in Net Assets Available for Plan Benefits.

Payment of Benefits

On termination of service due to death, disability, retirement or termination of employment, a Participant or his or her beneficiaries may elect to receive a lump sum distribution equal to the vested value of the Participant's account.

1. Description of the Plan (continued)

Distributions under the Plan shall be made consistent with the provisions of Section 401(a)(9) of the Code and all treasury regulations promulgated under that Section. In the event of financial hardship, a Participant may apply to the Plan Sponsor to receive a distribution from his or her account up to an amount not to exceed the Participant's pre-tax or post-tax contributions to the Plan, subject to a $500 minimum amount. Hardship withdrawals are strictly regulated by the IRS and a Participant must exhaust all available loan options and available distributions prior to requesting a hardship withdrawal. A Participant who has attained the age of 59½ shall be entitled to receive a distribution of all or a portion of the vested value of his or her account. Hardship withdrawals totaled $129,224 for the year ended December 31, 2019.

Break in Service

A Participant who terminates employment after participating in the Plan and is subsequently re-employed after completing one hour of service shall be eligible to become a Participant of the Plan upon enrollment in accordance with the Plan guidelines. If the Participant returns within five years, the Participant's prior service will again count toward vesting, and the non-vested portion of the Participant's benefit which the Participant lost when the Participant terminated employment will be reinstated. During 2019, one Participant was re-employed and incurred a 5 year break in service.

Forfeitures

Forfeitures represent non-vested employer contribution amounts forfeited by Participants. Forfeitures are first used to reduce Plan-related administrative expenses with any remaining amounts used to reduce future Plan Sponsor contributions. Please see additional information in Note 4.

Plan Termination

Although it has not expressed any intention to do so, the Plan Sponsor has the right under the Plan to terminate the Plan subject to the provisions set forth in ERISA. In the event of Plan termination, Participants will become 100% vested in their total account balance under the Plan.

1. Description of the Plan (continued)

Participant Transaction Expenses and Other Fees

To the extent permitted by law, Plan expenses associated with the administration of the Plan are paid by the Plan, unless the expenses are paid by the Plan Sponsor, pursuant to the terms of the Plan. Administrative expenses paid by the Plan may include recordkeeping and trustee fees (none for the years ended December 31, 2019 and 2018). Loan set up fees and other administrative fees, if any, are charged to each Participant's account and are included in participant transaction expenses on the Statements of Changes in Net Assets Available for Plan Benefits.

2. Summary of Significant Accounting Policies

Basis of Accounting

The accompanying financial statements have been prepared in accordance with accounting principles generally accepted in the United States ("US GAAP").

The preparation of financial statements in conformity with US GAAP requires the Plan Sponsor to make estimates and assumptions that affect the reported amounts in the financial statements. The Plan Sponsor believes that the estimates utilized in preparing the financial statements are reasonable. Actual results could differ from these estimates.

Investment Valuation and Income Recognition

The Plan's investments are stated at fair value. 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 (an exit price). Shares of registered investment funds and registered money market funds held by the Plan at year end are valued at quoted market prices, which represent the net asset value reported by such registered investment companies. Purchases and sales of securities are recorded on a trade-date basis. Interest income on investments is recorded on an accrual basis. Dividends are recorded on the ex-dividend date. Net realized and unrealized appreciation/(depreciation) in fair value of investments includes the Plan's gains and losses on investments bought and sold as well as held during the year. See Note 3 for further discussion and disclosures related to fair value measurements.

The Trustee revalues the Plan's investments at the close of each business day based on the changes in the net asset values reported by the registered investment companies and any other fluctuation of market prices of the investments. Accordingly, changes to investments for each Participant will be reflected in each Participant's account on a daily basis.

2. Summary of Significant Accounting Policies (continued)

Benefits Paid to Participants

Benefit payments to participants are recorded upon distribution. Benefits paid to participants on the Statements of Changes in Net Assets Available for Plan Benefits include $9,652,951 and $5,409,600 for 2019 and 2018, respectively, of transfers requested by participants of their account balances to other non-Two Sigma related qualified plans or accounts.

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New Accounting Pronouncements

In August 2018, the FASB issued ASU 2018-13, Fair Value Measurement (Topic 820), which changes the disclosure requirements for fair value measurement. The amendments will be effective for fiscal years beginning after December 15, 2019, with early adoption permitted. ASU 2018-13 removes, modifies and adds certain disclosure requirements with respect to fair value measurement. The Plan has elected to early adopt this standard. Early adoption did not have a material impact on these financial statements.

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Level I – Quoted prices are available in active markets as of the reporting date. The type of investments which would generally be included in Level I include registered investment and money market funds, listed equities, certain bonds and other exchange-traded investments.

3. Fair Value Measurement (continued)

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The following table summarizes the Plan's portfolio investments that were accounted for at fair value by level within the fair value hierarchy:

Total investments at fair value at December 31, 2019:

	Level I	Level II	Level III	Total
Registered investment funds	$272,998,674	$ –	$ –	$272,998,674
Registered money market fund	14,477,355	–	–	14,477,355
Total registered investments	$287,476,029	$ –	$ –	$287,476,029

Total investments at fair value at December 31, 2018:

	Level I	Level II	Level III	Total
Registered investment funds	$185,176,040	$ –	$ –	$185,176,040
Registered money market fund	12,682,081	–	–	12,682,081
Total registered investments	$197,858,121	$ –	$ –	$197,858,121

4. Forfeitures

During 2019 and 2018, forfeited non-vested amounts totaled $396,845 and $338,209, respectively. Total forfeitures of $405,378 and $333,870 in 2019 and 2018, respectively, were used to offset employer contributions as the Plan had no administrative expenses to offset, other than those paid directly by the Plan Sponsor. Forfeitures of $41,374 and $63,648 still remained to offset future employer contributions at December 31, 2019 and 2018, respectively.

5. Related-Party Transactions

Certain Plan investments are shares of mutual funds or money market funds managed by the Trustee. These transactions qualify as permitted party-in-interest transactions; however, they are exempt from prohibited transactions under ERISA.

In the normal course of business certain officers and employees of the Plan Sponsor (who may also be Participants in the Plan) perform administrative services related to the Plan's operation, recordkeeping and financial reporting. The Plan Sponsor pays these individuals' salaries and also pays for a portion of other administrative expenses on the Plan's behalf.

The foregoing transactions are not deemed prohibited party-in-interest transactions, because they are covered by statutory and administrative exemptions from the Code and ERISA's rules on prohibited transactions.

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By Adoption Agreement dated February 29, 2016, the Plan adopted a volume submitter defined contribution plan, effective February 1, 2016. The underlying volume submitter plan has received an advisory letter from the IRS dated March 31, 2014, stating that the form of the plan is qualified under Section 401 of the Code and, therefore, the related trust is tax-exempt. The plan administrator has determined that it is eligible to, and has chosen to, rely on the current IRS volume submitter advisory letter. Once qualified, the Plan is required to operate in conformity with the Code to maintain its qualified status. The plan administrator believes the Plan is being operated in compliance with the applicable requirements of the Code and, therefore, believes the Plan is qualified and the related trust is tax-exempt.

US GAAP requires plan management to evaluate tax positions taken by the Plan and recognize a tax liability if the Plan has taken an uncertain position that more likely than not would not be sustained upon examination by the IRS. Plan management has analyzed the tax positions taken by the Plan, and has concluded that there are no uncertain positions taken or expected to be taken. The Plan is subject to routine audits by taxing jurisdictions; however, there are currently no audits for any tax periods in progress.

7. Subsequent Events

The Plan Sponsor has evaluated subsequent events through August 12, 2020, the date the financial statements were available to be issued. There are no subsequent events which require disclosure, other than the events described below.

Subsequent to December 31, 2019, there was a global outbreak of a novel coronavirus disease ("COVID-19"), which the World Health Organization declared a "Public Health Emergency of International Concern." The outbreak of COVID-19 continues to adversely affect global commercial activity and has contributed to significant volatility in the financial markets. Because the values of the Plan's individual investments have and will fluctuate in response to changing market conditions, the amount of losses that will be recognized in subsequent periods, if any, and related impact on the Plan's liquidity cannot be determined at this time.

On March 27, 2020, the Coronavirus Aid, Relief and Economic Security ("CARES") Act was enacted and signed into law. The CARES Act provides immediate and temporary relief for retirement plan sponsors and their participants with respect to employer contributions, distributions and participant loans. The provisions of the CARES Act may be effective and operationalized immediately, prior to amending the plan document. Plan management has adopted certain relief provisions included in the CARES Act and continues to evaluate other provisions.

Supplemental Schedule

Two Sigma 401(k) Plan

EIN #13-4181471 Plan #001

Schedule H, Line 4(i) – Schedule of Assets (Held at End of Year)

December 31, 2019

Identity of Issue, Borrower, Lessor or Similar Party	Shares	Fair Value
Registered Investment Funds		
Fidelity 500 Index Fund*	539,940	$ 60,484,074
Fidelity Freedom Index 2050 Fund - Class W*	2,183,670	41,446,067
Fidelity Freedom Index 2040 Fund - Class W*	1,300,210	23,754,834
Fidelity Extended Market Index Fund*	195,131	12,701,057
Fidelity Select Technology Portfolio*	598,157	11,903,321
Fidelity U.S. Bond Index Fund*	998,424	11,891,231
Fidelity Freedom Index 2030 Fund - Class W*	500,513	8,558,769
Conestoga Small Cap Fund Investors Class	138,963	8,372,502
Fidelity Freedom Index 2060 Fund - Class W*	621,103	8,186,133
Fidelity Global ex U.S. Index Fund*	596,611	7,988,615
Fidelity Capital Appreciation Fund - Class K*	233,150	7,913,118
Fidelity Balanced Fund - Class K*	307,339	7,560,537
Neuberger Berman Genesis R6	126,641	7,398,385
Fidelity Real Estate Investment Portfolio*	149,306	6,708,318
Fidelity Pacific Basin Fund*	175,907	6,074,077
Fidelity Leveraged Company Stock Fund - Class K*	175,581	5,715,162
Invesco Developing Markets R6	142,066	5,452,498
T. Rowe Price Equity Income Fund	165,030	5,295,800
PIMCO High Yield Fund Institutional Class	535,512	4,841,031
Fidelity Europe*	98,834	3,582,723
Fidelity Select Natural Resources Portfolio*	114,950	3,042,727
Fidelity Emerging Markets Index Fund*	254,046	2,789,424
BlackRock Inflation Protected Bond Fund BlackRock Shares	248,772	2,649,420
Columbia Small Cap Index Fund Institutional 2 Class	103,483	2,502,217
T. Rowe Price Small-Cap Value Fund	48,490	2,322,205
Templeton Global Bond R6	199,970	2,133,677
Fidelity Freedom Index 2020 Fund - Class W*	103,886	1,548,940
Fidelity Freedom Index Income Fund - Investor Class*	15,317	181,812
Total registered investment funds		272,998,674
Registered Money Market Funds		
Fidelity Government Money Market Fund*	14,477,355	14,477,355
Notes Receivable From Participants		
Notes receivable from participants (varying maturity dates between 2020 and 2030 and interest rate of 5.00%-5.75%) *		1,328,643
Total		$ 288,804,672

**Permitted party-in-interest.*

Note: Cost information is not required for participant directed investments. All investments are participant directed, and therefore cost information is not included.