UNITED STATES SECURITIES AND EXCHANGE COMMISSION Washington, D.C. 20549

FORM 11-K

FOR ANNUAL REPORTS OF EMPLOYEE STOCK PURCHASE, SAVINGS AND SIMILAR PLANS PURSANT TO SECTION 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

(Mark One)

ANNUAL REPORT PURSUANT TO SECTION 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2019

OR

TRANSITION REPORT PURSUANT TO SECTION 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from ______ to _____.

Commission File Number: 001-37886

A. Full title of the plan and the address of the plan, if different from that of the issuer named below:

CAPSTAR BANK 401(k) PROFIT SHARING PLAN

B. Name of the issuer of the securities held pursuant to the plan and the address of its principal executive office:

CAPSTAR FINANCIAL HOLDINGS, INC. 1201 Demonbreun Street, Suite 700 Nashville, Tennessee 37203

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Audit Committee of the Board of Directors and Plan Administrator CapStar Bank 401(k) Profit Sharing Plan Nashville, Tennessee

Opinion on the Financial Statements

We have audited the accompanying statements of net assets available for benefits of the CapStar Bank 401(k) Profit Sharing Plan (Plan) as of December 31, 2019 and 2018, and the related statement of changes in net assets available for benefits for the year ended December 31, 2019, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements referred to above present fairly, in all material respects, the net assets available for benefits of the Plan as of December 31, 2019 and 2018, and the changes in net assets available for benefits for the year ended December 31, 2019, in conformity with accounting principles generally accepted in the United States of America.

Basis of Opinion

These financial statements are the responsibility of the Plan's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Plan in accordance with the U.S. federal securities laws and the applicable rules and regulations of the U.S. Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Plan is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits we are required to obtain an understanding of internal control over financial reporting an opinion on the effectiveness of the Plan's internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Report on Supplemental Information

The supplemental information in the accompanying schedule of delinquent participant contributions for the year ended December 31, 2019, and schedule of assets (held at end of year) as of December 31, 2019, has been subjected to audit procedures performed in conjunction with the audit of the Plan's financial statements. The supplemental schedules are the responsibility of the Plan's management. Our audit procedures included determining whether the supplemental schedules reconcile to the financial statements or the underlying accounting and other records, as applicable, and performing procedures to test the completeness and accuracy of the information presented in the supplemental schedules. In forming our opinion on the supplemental schedules, we evaluated whether the supplemental schedules, including its form and content, are presented in conformity with the Department of Labor's Rules and Regulations for Reporting and Disclosure under the *Employee Retirement Income Security Act of 1974*. In our opinion, the schedule of delinquent participant contributions and schedule of assets (held at end of year) are fairly stated, in all material respects, in relation to the basic financial statements taken as a whole.

/s/ BKD, LLP

We have served as the Plan's auditor since 2014.

Evansville, Indiana June 26, 2020

CAPSTAR BANK 401(k) PROFIT SHARING PLAN STATEMENTS OF NET ASSETS AVAILABLE FOR BENEFITS DECEMBER 31, 2019 AND 2018

	 2019	 2018
Assets		
Investments, at fair value	\$ 15,483,622	\$ 10,693,917
Cash	—	75,874
Receivables:		
Participant contributions	53,341	1,984
Employer contributions	33,737	1,447
Notes receivable from participants	31,448	58,086
Total Assets	15,602,148	10,831,308
Liabilities		
Payables:		
Other payable	91,972	
Net assets available for benefits	\$ 15,510,176	\$ 10,831,308

See Notes to Financial Statements

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CAPSTAR BANK 401(k) PROFIT SHARING PLAN STATEMENT OF CHANGES IN NET ASSETS AVAILABLE FOR BENEFITS YEAR ENDED DECEMBER 31, 2019

To and and and a		
Investment gain:	¢	2 22 4 501
Net appreciation in fair value of investments	\$	2,204,581
Interest and dividends		359,092
Net investment gain		2,563,673
Interest income on notes receivable from participants		3,756
Contributions:		
Participant		1,610,385
Employer		873,827
Rollover		1,327,800
		3,812,012
Total additions		6,379,441
Deductions:		
Benefits paid to participants		1,695,011
Administrative expenses		5,562
Total deductions		1,700,573
Net increase		4,678,868
		,,
Net assets available for benefits, beginning of year		10,831,308
		-,,
Net assets available for benefits, end of year	\$	15,510,176
The about available for belieflig, end of year	<u> </u>	10,010,170

See Notes to Financial Statements

Note 1: Description of the Plan

The following description of the CapStar Bank 401(k) Profit Sharing Plan (Plan) provides only general information. Participants should refer to the Plan Document for a more complete description of the Plan's provisions.

General

The Plan is a defined contribution plan sponsored by CapStar Bank (Company) for the benefit of its full-time employees and part-time employees whose regularly scheduled hours during each computation period exceed 1,000 hours. The Plan is subject to the provisions of the *Employee Retirement Income Security Act of 1974* (ERISA). Newport Trust Company is the trustee of the Plan and serves as Plan Custodian.

Effective April 30, 2018, the Plan allows participants to direct a portion of their investments into a fund that is invested in the common stock of CapStar Financial Holdings, Inc. (CapStar). The Plan sponsor has placed a limit on participant investments into this fund whereby no more than 10% of a participant's account balance may be invested in this fund. Investments in the Plan, including CapStar common stock, have been registered with the Securities and Exchange Commission (SEC).

Contributions

The Plan permits eligible employees through a salary deferral election to have the Company make annual contributions in amounts up to the maximum amount allowed by law. Employee Roth, rollover and catch-up contributions are also permitted. The Company makes safe-harbor nonelective contributions to each eligible participant in an amount equal to 3% of the employee's eligible compensation. The Company may elect to make additional matching contributions or profit-sharing contributions equal to a discretionary percentage. No discretionary matching contributions were made to the Plan for the year ended December 31, 2019. Contributions are subject to certain limitations.

Participant Investment Account Options

Each participant has the option of directing his or her contributions into any of the various investment options offered by the Plan and may change the allocation daily.

Participant Accounts

Each participant's account is credited with the participant's contribution, the Company's contribution and Plan earnings and is charged with an allocation of administrative expenses. Allocations are based on participant earnings or account balances, as defined. The benefit to which a participant is entitled is the benefit that can be provided from the participant's vested account.

Vesting

Participants are immediately vested in their voluntary contributions and employer safe harbor nonelective contributions, plus earnings thereon. Vesting in the Company's discretionary matching and profit-sharing contribution portions of their accounts, plus earnings thereon, is based on employees' service. A participant is fully vested in employer discretionary matching and profit-sharing contributions, if applicable, after four years of service. Forfeitures, if applicable, are used to pay administrative expenses or to reduce any employer contribution.

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 account balance. The loans are secured by the balance in the participant's account. The loan interest rate, determined quarterly, is set at 1% above the prime rate, as defined. Principal and interest is paid ratably through payroll deductions.

Payment of Benefits

Upon termination of service, a participant may elect to receive a lump-sum amount equal to the value of his or her account.

Forfeited Accounts

At December 31, 2019 and 2018, the Plan had no forfeited nonvested account balances.

Note 2: Summary of Significant Accounting Policies

Basis of Accounting

The accompanying financial statements of the Plan are prepared on the accrual basis of accounting.

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of net assets and changes in net assets and disclosure of contingent assets and liabilities at the date of the financial statements. Actual results could differ from those estimates.

Investment Valuation and Income Recognition

Investments are reported at fair value. Quoted market prices, if available, are used to value investments. Mutual funds are valued at quoted market prices of shares held by the Plan at year-end. Common stock within the unitized stock fund is valued at the closing price reported on the active market on which the individual securities are traded. Money market funds, including those within the unitized stock fund, are valued at amortized cost, which approximates fair value. The Plan's interest in the collective trust is valued at the net asset value (NAV) of units of the collective trust. The NAV is used as a practical expedient to estimate fair value of the collective trust investment.

Purchases and sales of securities are recorded on a trade-date basis. Interest income is recorded on the accrual basis. Dividends are recorded on the ex-dividend date. Net appreciation (depreciation) includes the Plan's gains and losses on investments bought and sold, as well as held during the year.

Notes Receivable from Participants

Notes receivable from participants are measured at their unpaid principal balance plus any accrued but unpaid interest. Delinquent participant loans are reclassified as distributions based upon the terms of the Plan Document.

Payment of Benefits

Benefit payments to participants are recorded upon distribution.

Administrative Expenses

Administrative expenses may be paid by the Company or the Plan, at the Company's discretion.

Note 3: Related-Party and Party-in-Interest Transactions

Party-in-interest transactions include those with fiduciaries or employees of the Plan, any person who provides services to the Plan, an employer whose employees are covered by the Plan, an employee organization whose members are covered by the Plan, a person who owns 50% or more of such an employer or employee association or relatives of such persons.

The Plan paid \$5,562 of fees to the Plan recordkeeper during the year ended December 31, 2019. The Company provides certain administrative services at no cost to the Plan.

The Plan held the following party-in-interest investments (at fair value) within the unitized stock fund at December 31:

	 2019	2018
CapStar Financial Holdings Inc. (CSTR) common stock	\$ 783,732	\$ 23,421
Shares outstanding	47,071	1,590
		7

Note 4: Disclosures About Fair Value of Plan Assets and Liabilities

Fair value is the price that would be received by the Plan for an asset or paid by the Plan to transfer a liability (an exit price) in an orderly transaction between market participants on the measurement date in the Plan's principal or most advantageous market for the asset or liability. Fair value measurements must maximize the use of observable inputs and minimize the use of unobservable inputs. There is a hierarchy of three levels of inputs that may be used to measure fair value:

- Level 1 Quoted prices in active markets for identical assets or liabilities
- Level 2 Observable inputs other than Level 1 prices, such as quoted prices for similar assets or liabilities; quoted prices in markets that are not active; or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities
- Level 3 Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities

Recurring Measurements

The following table presents the fair value measurements of assets recognized in the accompanying statements of net assets available for benefits measured at fair value on a recurring basis and the level within the fair value hierarchy in which the fair value measurements fall at December 31, 2019 and 2018:

	Fair value measurements using			
	Quoted prices in active markets for identical assets (Level 1)	Significant other observable inputs (Level 2)	Significant unobservable inputs (Level 3)	Total
December 31, 2019				
Money market funds	\$ 899,020			899,020
Mutual funds	13,186,812	—	—	13,186,812
Unitized stock fund	814,048			814,048
Total assets in fair value hierarchy	14,899,880			14,899,880
Investments measured at net asset value (A):				
Collective trust fund				583,742
				\$15,483,622
December 31, 2018				
Mutual funds	\$ 9,613,177	\$ —	\$ —	\$ 9,613,177
Unitized stock fund	26,261			26,261
Total assets in fair value hierarchy	9,639,438			9,639,438
	<u> </u>			
Investments measured at net asset value (A):				
Collective trust fund				1,054,479
				\$10,693,917

(A) In accordance with Subtopic 820-10, an investment measured at the NAV per share (or its equivalent) has not been classified in the fair value hierarchy. The fair value amount presented in this table is intended to permit a reconciliation of the fair value hierarchy to the line items presented in the statements of net assets available for benefits.

Following is a description of the valuation methodologies and inputs used for assets measured at fair value on a recurring basis and recognized in the accompanying statements of net assets available for benefits, as well as the general classification of such assets pursuant to the valuation hierarchy. There have been no significant changes in the valuation techniques during the year ended December 31, 2019. The Plan had no liabilities measured at fair value on a recurring basis. In addition, the Plan had no assets or liabilities measured at fair value on a nonrecurring basis.

Investments

Where quoted market prices are available in an active market, investments are classified within Level 1 of the valuation hierarchy. If quoted market prices are not available, then fair values are estimated by using quoted prices of securities with similar characteristics or independent asset pricing services and pricing models, the inputs of which are market-based or independently sourced market parameters, including, but not limited to, yield curves, interest rates, volatilities, prepayments, defaults, cumulative loss projections and cash flows. Such investments are classified in Level 2 of the valuation hierarchy. In certain cases where Level 1 or Level 2 inputs are not available, securities are classified within Level 3 of the hierarchy.

The unitized stock fund consists of CapStar Financial Holdings, Inc. (CSTR) common stock and money market funds that provide liquidity for daily trading. CSTR common stock is valued at the closing price reported on the active market on which the individual securities are traded and the money market funds are valued at amortized cost, which approximates fair value.

Investment Measured Using the Net Asset Value per Share Practical Expedient

The following tables summarize the investment for which fair value is measured using the NAV per share practical expedient as of December 31, 2019 and 2018. There are no participant redemption restrictions for these investments; the redemption notice period is applicable only to the Plan.

	Fair value	Unfunded commitments	Redemption frequency	Redemption notice period
December 31, 2019				
Morley Stable Value Fund	\$ 583,742	N/A	Daily	None
December 31, 2018				
Morley Stable Value Fund	\$ 1,054,479	N/A	Daily	None

Note 5: Risks and Uncertainties

The Plan invests in various investment securities. 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 the participants' account balances and the amounts reported in the statements of net assets available for benefits.

Note 6: Plan Termination

Although it has not expressed any intent to do so, the Company has the right under the Plan to discontinue its contributions at any time and to terminate the Plan subject to the provisions of ERISA. In the event of Plan termination, participants would become 100% vested in their employer contributions.

Note 7: Tax Status

The Plan operates under a volume submitter adoption agreement and plan document sponsored by Newport Group, Inc. The volume submitter document has been filed with the appropriate agency. The Plan has not obtained or requested a determination letter. However, the Plan administrator believes the Plan and related trust are currently designed and are being operated in compliance with the applicable requirements of the Internal Revenue Code and the Plan was qualified and the related trust was exempt as of the financial statement date. Accounting principles generally accepted in the United States of America require 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. The Plan is subject to routine audits by taxing jurisdictions; however, there are currently no audits for any tax periods in progress.

Note 8: Plan Amendment

Effective September 28, 2018, the Plan was amended to recognize predecessor service for employees hired in conjunction with an acquisition during the year ended December 31, 2018, and to allow for the rollover of loans for certain participants. All other significant provisions of the Plan remained unchanged as a result of this amendment.

Note 9: Subsequent Events

The plan has evaluated all events or transactions that occurred through June 26, 2020, the date the financial statements were issued and determined that there are no matters requiring adjustment to or disclosure in the accompanying financial statements and related notes with the exception of the following:

As a result of the spread of the COVID-19 coronavirus, economic uncertainties have arisen which have resulted in significant volatility in the investment markets, resulting in a substantial decline in the value of investments. The duration of these uncertainties and the ultimate financial effects cannot be reasonably estimated at this time.

Supplemental Schedules

CAPSTAR BANK 401(k) PROFIT SHARING PLAN EIN 26-0189349 PN 001 SCHEDULE H, LINE 4a – SCHEDULE OF DELINQUENT PARTICIPANT CONTRIBUTIONS DECEMBER 31, 2019

For the year ended December 31, 2019

Pa	ırticipant					
Cor	ntributions					
Trans	sferred Late			Contributions		Total Fully Corrected
to Pla	an (Includes	Contr	ibutions Not	Corrected Outside	Contributions Pending	Under VFCP and PTE
Loan	n Payments)	С	orrected	VFCP	Correction in VFCP	2002-51
\$	10,744	\$	10,744			

CAPSTAR BANK 401(k) PROFIT SHARING PLAN EIN 26-0189349 PN 001 SCHEDULE H, LINE 4i – SCHEDULE OF ASSETS (HELD AT END OF YEAR) DECEMBER 31, 2019

Identity of issuer	Description of investment	Current value
futual Funds:	32,244 shares	¢ 1,002,00
American Funds AmCap Fund American Funds Europacific Growth Fund	14,358 shares	
Doubleline Total Return Bond Fund	39,837 shares	797,58
	,	423,46
First Eagle Global Fund	21,733 shares	1,265,29
Gabelli ABC Fund	35,006 shares	353,56
Lazard US Equity Concentrated Portfolio	75,071 shares	1,264,19
Vanguard 500 Index Admiral Fund	8,205 shares	2,446,12
Vanguard Developed Markets Index Fund	34,480 shares	487,55
Vanguard Emerging Markets Index Fund	13,720 shares	506,94
Vanguard Growth Index Fund	1,336 shares	125,35
Vanguard High Dividend Yield Index Fund	7,481 shares	211,41
Vanguard High-Yield Corporate Bond Fund	25,999 shares	154,95
Vanguard Mid Cap Index Fund	2,990 shares	659,68
Vanguard Small Cap Index Fund	11,386 shares	903,70
Vanguard Target Retirement 2015 Fund	2,152 shares	32,66
Vanguard Target Retirement 2020 Fund	5,701 shares	185,46
Vanguard Target Retirement 2025 Fund	12,328 shares	244,58
Vanguard Target Retirement 2030 Fund	8,513 shares	310,28
Vanguard Target Retirement 2035 Fund	16,407 shares	369,49
Vanguard Target Retirement 2040 Fund	7,425 shares	290,54
Vanguard Target Retirement 2045 Fund	6,155 shares	152,03
Vanguard Target Retirement 2050 Fund	4,838 shares	192,40
Vanguard Target Retirement 2055 Fund	222 shares	9,56
Vanguard Target Retirement 2060 Fund	316 shares	12,07
Vanguard Target Retirement 2065 Fund	327 shares	7,86
Vanguard Total International Stock Index Fund	3,548 shares	105,97
Vanguard Total Stock Market Index Fund	4,555 shares	363,00
Vanguard Total World Stock Index Fund	183 shares	5,25
Vanguard Value Index Fund	4,528 shares	211,78
	1,520 514105	13,186,81
Unitized Stock Fund - CapStar Bank Unitized Stock Fund	91,569 shares	814,04
-		01,00
loney Market Funds:		
Schwab Bank Sweep	281,787 shares	281,78
Schwab Government Money Fund	617,234 shares	617,23
		899,02
ollective Trust Fund - Morley Stable Value Fund	21,896 shares	583,74
Participant Loans	Participant plan notes:	
	Lowest interest rate - 4.75%	
	Highest interest rate - 6.50%	
	Through April 2034	31,44
	0	\$ 15,515,07

*Party-in-interest

CAPSTAR BANK 401(k) PROFIT SHARING PLAN EXHIBIT INDEX

Exhibit Number	Description
23.1	Consent of Independent Registered Public Accounting Firm

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the trustees (or other persons who administer the employee benefit plan) have duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

CAPSTAR BANK 401(k) PROFIT SHARING PLAN

By: /s/ Robert B. Anderson

Robert B. Anderson Chief Financial Officer and Chief Administrative Officer

Date: June 26, 2020

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in Registration Statements (Registration No.

333-224559) on Form S-8 of CapStar Financial Holdings, Inc. of our report dated June 26, 2020, relating to our audits of the statements of net assets available for benefits of the CapStar Bank 401(k) Profit Sharing Plan as of December 31, 2019 and 2018, and the related statement of changes in net assets available for benefits for the year ended December 31, 2019, which report appears in this Annual Report on Form 11-K of the CapStar Bank 401(k) Profit Sharing Plan for the year ended December 31, 2019.

/s/ BKD, LLP

Evansville, Indiana June 26, 2020