JPMorgan Chase Financial Company LLC

(an indirect wholly-owned subsidiary of JPMorgan Chase & Co.)

Financial Statements
December 31, 2022 and 2021

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December 31, 2022 and 2021

Report of Independent Auditors

To Management and the Board of Managers of JPMorgan Chase Financial Company LLC

Opinion

We have audited the accompanying financial statements of JPMorgan Chase Financial Company LLC (the "Company"), which comprise the statements of financial condition as of December 31, 2022 and 2021, and the related statements of income (loss) and comprehensive income (loss), of changes in member's equity and of cash flows for the years then ended, including the related notes (collectively referred to as the "financial statements").

In our opinion, the accompanying financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2022 and 2021, and the results of its operations and its cash flows for the years then ended in accordance with accounting principles generally accepted in the United States of America.

Basis for Opinion

We conducted our audit in accordance with auditing standards generally accepted in the United States of America (US GAAS). Our responsibilities under those standards are further described in the Auditors' Responsibilities for the Audit of the Financial Statements section of our report. We are required to be independent of the Company and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements relating to our audit. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Responsibilities of Management for the Financial Statements

Management is responsible for the preparation and fair presentation of the financial statements in accordance with accounting principles generally accepted in the United States of America, and for the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is required to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the Company's ability to continue as a going concern for one year after the date the financial statements are available to be issued.

Auditors' Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' report that includes our opinion. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with US GAAS will always detect a material misstatement when it exists. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. Misstatements are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment made by a reasonable user based on the financial statements.

In performing an audit in accordance with US GAAS, we:

- Exercise professional judgment and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements.
- Obtain an understanding of internal control relevant to the audit 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 Company's internal control. Accordingly, no such opinion is expressed.
- Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the financial statements.
- Exercise professional judgment and maintain professional skepticism throughout the audit.
- Conclude whether, in our judgment, there are conditions or events, considered in the aggregate, that raise substantial doubt about the Company's ability to continue as a going concern for a reasonable period of time.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit, significant audit findings, and certain internal control-related matters that we identified during the audit.

PricewaterhouseCoopers LLP

April 17, 2023

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JPMorgan Chase Financial Company LLC

(an indirect wholly-owned subsidiary of JPMorgan Chase & Co.)

Statements of Financial Condition

December 31, 2022 and 2021

December 31, (in thousands)		2022		2021
Assets				
Cash	$	174,307	$	214,700
Receivables		148,244		52,578
Financial instruments owned, at fair value		30,054,397		17,924,235
Other assets		11,785		–
Total assets	**$**	**30,388,733**	**$**	**18,191,513**
Liabilities				
Short-term borrowings (included $848,657 and $378,470 at fair value)	$	870,269	$	378,470
Payables		28,593		18,392
Other liabilities and accrued expenses		33,430		96
Long-term debt, at fair value		29,227,790		17,548,917
Total liabilities		**30,160,082**		**17,945,875**
Contingencies (refer to Note 11)				
Member's equity				
Member's interest		250,000		250,000
Retained earnings/(accumulated deficit)		(36,651)		52,267
Accumulated other comprehensive income/(loss)		15,302		(56,629)
Total member's equity		**228,651**		**245,638**
Total liabilities and member's equity	**$**	**30,388,733**	**$**	**18,191,513**

The accompanying Notes are an integral part of the Financial Statements.

JPMorgan Chase Financial Company LLC

(an indirect wholly-owned subsidiary of JPMorgan Chase & Co.)

Statements of Income/(Loss) and Comprehensive Income/(Loss)

December 31, 2022 and 2021

Year ended December 31, (in thousands)	2022	2021
Revenues		
Principal transactions	$ (23,425)	$ 55,055
Other	4,660	301
Total revenues	**(18,765)**	**55,356**
Expenses		
Interest expense	68,153	1,726
Management fees and allocated corporate overhead	1,806	348
Other	194	160
Total expenses	**70,153**	**2,234**
Net income/(loss)	**$ (88,918)**	**$ 53,122**
Total other comprehensive income/(loss)	**71,931**	**(20,007)**
Comprehensive income/(loss)	**$ (16,987)**	**$ 33,115**

The accompanying Notes are an integral part of the Financial Statements.

Statements of Changes in Member's Equity

December 31, 2022 and 2021

Year ended December 31, (in thousands)	2022	2021
Member's interest		
Balance at January 1 and December 31	$ 250,000	$ 250,000
Retained earnings/(accumulated deficit)		
Balance at January 1	52,267	(855)
Net income/(loss)	(88,918)	53,122
Balance at December 31	(36,651)	52,267
Accumulated other comprehensive income/(loss)		
Balance at January 1	(56,629)	(36,622)
Other comprehensive income/(loss)	71,931	(20,007)
Balance at December 31	15,302	(56,629)
Total member's equity	**$ 228,651**	**$ 245,638**

The accompanying Notes are an integral part of the Financial Statements.

JPMorgan Chase Financial Company LLC

(an indirect wholly-owned subsidiary of JPMorgan Chase & Co.)

Statements of Cash Flows

December 31, 2022 and 2021

Year ended December 31, (in thousands)	2022	2021
Operating activities		
Net income/(loss)	$ (88,918)	$ 53,122
Net change in operating assets:		
Receivables	(95,666)	(46,466)
Financial instruments owned	(12,130,162)	(3,214,709)
Other assets	(11,785)	22
Net change in operating liabilities:		
Payables	10,201	17,045
Other liabilities and accrued expenses	34,562	(96)
Other operating adjustments	(2,757,562)	1,919,548
Net cash used in operating activities	**(15,039,330)**	**(1,271,534)**
Financing activities		
Net change in short-term borrowings	509,289	123,263
Proceeds from long-term debt	22,097,846	11,659,534
Payments of long-term debt	(7,637,582)	(10,526,351)
All other financing activities, net	30,612	(20,007)
Net cash provided by financing activities	**15,000,165**	**1,236,439**
Effect of exchange rate changes on cash	(1,228)	7
Net decrease in cash	(40,393)	(35,088)
Cash at beginning of year	214,700	249,788
Cash at end of year	**$ 174,307**	**$ 214,700**
Cash paid during the year for interest	$ 68,153	$ 1,726

The accompanying Notes are an integral part of the Financial Statements.

1. Organization

JPMorgan Chase Financial Company LLC (the "Company"), is a wholly-owned subsidiary of JPMorgan Chase Holdings LLC (the "IHC"), which is an intermediate holding company and indirect wholly-owned subsidiary of JPMorgan Chase & Co. ("JPMorgan Chase"), a leading financial services firm based in the United States of America ("U.S."), with operations worldwide. For purposes of this report, an "affiliate" is defined as JPMorgan Chase or a direct or indirect subsidiary of JPMorgan Chase. The Company is subject to the jurisdiction of the Board of Governors of the Federal Reserve System (the "Federal Reserve").

Nature of business

The Company's sole purpose is providing JPMorgan Chase and/or its affiliates with financing for their operations by issuing securities designed to meet investor demand for products that reflect certain risk-return profiles and specific market exposure. The Company lends, through inter-affiliate note arrangements, the net proceeds from these offerings to JPMorgan Chase affiliates. The Company expects that its affiliates will use the proceeds from these loans to provide additional funds for their operations and for other general corporate purposes.

Parent company guarantee of certain obligations

Any securities issued by the Company will be fully and unconditionally guaranteed by JPMorgan Chase. The Company lends, through inter-affiliate note arrangements, the net proceeds from these offerings to JPMorgan Chase affiliates.

2. Significant accounting policies

The accounting and financial reporting policies of the Company conform to accounting principles generally accepted in the U.S. ("U.S. GAAP"). Additionally, where applicable, the policies conform to the accounting and reporting guidelines prescribed by regulatory authorities.

(a) Accounting and reporting developments

Financial Accounting Standards Board ("FASB") Standards adopted since January 1, 2021

Standard	Summary of guidance	Effects on Financial Statements
Reference Rate Reform *Issued March 2020 and updated January 2021 and December 2022*	• Provides optional expedients and exceptions to current accounting guidance when financial instruments and other transactions are amended due to reference rate reform. • Provides an election to account for certain contract amendments related to reference rate reform as modifications rather than extinguishments without the requirement to assess the significance of the amendments. • The December 2022 update extends the termination date of the optional expedients and exceptions to December 31, 2024.	• Issued and effective March 12, 2020. The January 7, 2021 and December 21, 2022 updates were effective when issued. • The Company elected to apply certain of the practical expedients related to contract modifications and discounting transition beginning in the third quarter of 2020. The main purpose of the practical expedients is to ease the administrative burden of accounting for contracts impacted by reference rate reform. These elections did not have a material impact on the Financial Statements.

(b) Basis of presentation

Use of estimates in the preparation of the Financial Statements

The preparation of the Financial Statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, revenue and expense, and disclosures of contingent assets and liabilities. Actual results could be different from these estimates.

Foreign currency translation

The Company revalues assets, liabilities, revenue and expense denominated in non-U.S. currencies into U.S. dollars using applicable exchange rates.

(c) Receivables and payables

Receivables and payables include net receivables or net payables arising from unsettled trades on an affiliate and non-affiliate basis. Receivables and payables additionally include when the Company fails to deliver securities to a purchaser by the settlement date or fails to receive securities from a seller by the settlement date.

(d) Financial instruments owned, short-term borrowings and long-term debt

Financial instruments owned, short-term borrowings and long-term debt are predominantly accounted for at fair value. The short-term borrowings and long-term debt represent structured product issuances, and financials instruments owned represent those proceeds from the sale of the structured products being used to fund the activities of other JPMorgan Chase undertakings through certain economic hedging arrangements. These securities transactions are recorded on the trade date, the date on which an agreement is executed to purchase or sell a security. Refer to Note 3 for further information related to the Company's valuation methodologies under fair value measurement.

(e) Accumulated other comprehensive income/(loss)
Accumulated other comprehensive income/(loss) ("AOCI") includes the after-tax change in unrealized gains and losses on intercompany fair value option elected liabilities arising from changes in the Company's own credit risk (Debit Valuation Adjustment "DVA"). Refer to Note 10 for further information.

(f) Principal transactions revenue
Principal transactions revenue includes affiliate and non-affiliate realized and unrealized gains and losses on structured notes recorded on financial instruments owned, short-term borrowings and long-term debt under the fair value option. Refer to Notes 4 and 5 for further information.

(g) Interest expense
Interest expense predominantly includes the current period interest paid and accrued primarily related to structured notes recorded on short-term borrowings and long-term debt. Refer to Note 6 for further information.

3. Fair value measurement of financial instruments

The Company carries a portion of its assets and liabilities at fair value. These assets and liabilities are predominantly carried at fair value on a recurring basis (i.e., assets and liabilities that are measured and reported at fair value on the Company's Statements of Financial Condition). Certain assets and liabilities are measured at fair value on a nonrecurring basis; that is, they are not measured at fair value on an ongoing basis but are subject to fair value adjustments only in certain circumstances (for example, when there is evidence of impairment).

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. Fair value is based on quoted market prices or inputs, where available. If prices or quotes are not available, fair value is based on valuation models and other valuation techniques that consider relevant transaction characteristics (such as maturity) and use, as inputs, observable or unobservable market parameters, including yield curves, interest rates, volatilities, prices (such as commodity, equity or debt prices), correlations, foreign exchange ("FX") rates and credit curves. Valuation adjustments may be made to ensure that financial instruments are recorded at fair value, as described below.

The level of precision in estimating unobservable market inputs or other factors can affect the amount of gain or loss recorded for a particular position. Furthermore, while the Company believes its valuation methods are appropriate and consistent with those of other market participants, the methods and assumptions used reflect management judgment and may vary across the Company's businesses and portfolios.

The Company uses various methodologies and assumptions in the determination of fair value. The use of different methodologies or assumptions by other market participants compared with those used by the Company could result in the Company deriving a different estimate of fair value at the reporting date.

Valuation process

Risk-taking functions are responsible for providing fair value estimates for assets and liabilities carried on the Statements of Financial Condition at fair value. JPMorgan Chase's Valuation Control Group ("VCG"), which is part of JPMorgan Chase's Finance function and independent of the risk-taking functions, is responsible for verifying these estimates and determining any fair value adjustments that may be required to ensure that the Company's positions are recorded at fair value. In addition, JPMorgan Chase's Firmwide Valuation Governance Forum ("VGF"), which is composed of senior finance and risk executives, is responsible for overseeing the management of risks arising from valuation activities conducted across JPMorgan Chase. JPMorgan Chase's VGF is chaired by the JPMorgan Chase Firmwide head of the VCG (under the direction of JPMorgan Chase's Controller), and includes sub-forums covering the Company.

Price verification process
The VCG verifies fair value estimates provided by the risk-taking functions by leveraging independently derived prices, valuation inputs and other market data, where available. Where independent prices or inputs are not available, the VCG performs additional review to ensure the reasonableness of the estimates. The additional review may include evaluating the limited market activity including client unwinds, benchmarking valuation inputs to those used for similar instruments, decomposing the valuation of structured instruments into individual components, comparing expected to actual cash flows,

and reviewing profit and loss trends. There are also additional levels of management review for more significant or complex positions.

The VCG determines any valuation adjustments that may be required to the estimates provided by the risk-taking functions. No adjustments to quoted prices are applied for instruments classified within level 1 of the fair value hierarchy (refer to the discussion below for further information on the fair value hierarchy). For other positions, judgment is required to assess the need for valuation adjustments to appropriately reflect liquidity considerations, unobservable parameters, and, for certain portfolios that meet specified criteria, the size of the net open risk position. The determination of such adjustments follows a consistent framework across JPMorgan Chase.

- Liquidity valuation adjustments are considered where an observable external price or valuation parameter exists but is of lower reliability, potentially due to lower market activity. Liquidity valuation adjustments are made based on current market conditions. Factors that may be considered in determining the liquidity adjustment include analysis of: (1) the estimated bid-offer spread for the instrument being traded; (2) alternative pricing points for similar instruments in active markets; and (3) the range of reasonable values that the price or parameter could take.
- The Company manages certain portfolios of financial instruments on the basis of net open risk exposure and, as permitted by U.S. GAAP, has elected to estimate the fair value of such portfolios on the basis of a transfer of the entire net open risk position in an orderly transaction. Where this is the case valuation adjustments may be necessary to reflect the cost of exiting a larger-than-normal market-size net open risk position. Where applied, such adjustments are based on factors that a relevant market participant would consider in the transfer of the net open risk position, including the size of the adverse market move that is likely to occur during the period required to reduce the net open risk position to a normal market-size.
- Uncertainty adjustments related to unobservable parameters may be made when positions are valued using prices or input parameters to valuation models that are unobservable due to a lack of market activity or because they cannot be implied from observable market data. Such prices or parameters must be estimated and are, therefore, subject to management judgment. Adjustments are made to reflect the uncertainty inherent in the resulting valuation estimate.
- Where appropriate, the Company also applies adjustments to its estimates of fair value in order to appropriately reflect counterparty credit quality, JPMorgan Chase's own creditworthiness and the impact of funding, using a consistent framework across the Company.

Valuation model review and approval
If prices or quotes are not available for an instrument or a similar instrument, fair value is generally determined using valuation models that consider relevant transaction terms such as maturity and use as inputs market-based or independently sourced parameters. Where this is the case the price verification process described above is applied to the inputs in those models.

Under JPMorgan Chase's Estimations and Model Risk Management Policy, Model Risk Governance and Review ("MRGR") reviews and approves new models, as well as material changes to existing models, prior to implementation in the operating environment. In certain circumstances exceptions may be granted to JPMorgan Chase's policy to allow a model to be used prior to review or approval. JPMorgan Chase's MRGR may also require the user to take appropriate actions to mitigate the model risk if it is to be used in the interim. These actions will depend on the model and may include, for example, limitation of trading activity.

Fair value hierarchy
A three-level fair value hierarchy has been established under U.S. GAAP for disclosure of fair value measurements. The fair value hierarchy is based on the observability of inputs to the valuation of an asset or liability as of the measurement date. The three levels are defined as follows.

- Level 1 – inputs to the valuation methodology are quoted prices (unadjusted) for identical assets or liabilities in active markets.
- Level 2 – inputs to the valuation methodology include quoted prices for similar assets and liabilities in active markets, and inputs that are observable for the asset or liability, either directly or indirectly, for substantially the full term of the financial instrument.
- Level 3 – one or more inputs to the valuation methodology are unobservable and significant to the fair value measurement.

A financial instrument's categorization within the fair value hierarchy is based on the lowest level of input that is significant to the fair value measurement.

The following is a description of the valuation methodologies generally used by the Company to measure its more significant products/instruments at fair value, including the general classification of such instruments pursuant to the fair value hierarchy.

Product/instrument	Valuation methodology	Classifications in the fair value hierarchy
Structured notes (included in financial instruments owned, short-term borrowings and long-term debt)	• Valuations are based on discounted cash flow analyses that consider the embedded derivative and the terms and payment structure of the financial instrument. • The embedded derivative features are considered using models such as the Black-Scholes option pricing model, simulation models, or a combination of models that may use observable or unobservable valuation inputs, depending on the embedded derivative. The specific inputs used vary according to the nature of the embedded derivative features, as described in the discussion below regarding derivatives valuation.	Level 2 or 3

The following table presents the assets and liabilities reported at fair value as of December 31, 2022 and 2021, by major product category and fair value hierarchy.

	Fair value hierarchy			
December 31, 2022 (in thousands)	Level 1	Level 2	Level 3	Total fair value
Total assets measured at fair value on a recurring basis				
Financial instruments owned	$ –	$ 18,902,339	$ 11,152,058	$ 30,054,397
Total liabilities measured at fair value on a recurring basis				
Short-term borrowings	$ –	$ 681,986	$ 166,671	$ 848,657
Long-term debt	–	18,241,713	10,986,077	29,227,790

	Fair value hierarchy			
December 31, 2021 (in thousands)	Level 1	Level 2	Level 3	Total fair value
Total assets measured at fair value on a recurring basis				
Financial instruments owned	$ –	$ 9,598,440	$ 8,325,795	$ 17,924,235
Total liabilities measured at fair value on a recurring basis				
Short-term borrowings	$ –	$ 262,144	$ 116,326	$ 378,470
Long-term debt	–	9,339,706	8,209,211	17,548,917

Level 3 valuations

The Company has established well-structured processes for determining fair value, including for instruments where fair value is estimated using significant unobservable inputs (level 3).

Estimating fair value requires the application of judgment. The type and level of judgment required is largely dependent on the amount of observable market information available to the Company. For instruments valued using internally developed valuation models and other valuation techniques that use significant unobservable inputs and are therefore classified within level 3 of the fair value hierarchy, judgments used to estimate fair value are more significant than those required when estimating the fair value of instruments classified within levels 1 and 2.

In arriving at an estimate of fair value for an instrument within level 3, management must first determine the appropriate valuation model or other valuation technique to use. Second, due to the lack of observability of significant inputs, management must assess relevant empirical data in deriving valuation inputs including transaction details, yield curves, interest rates, prepayment speed, default rates, volatilities, correlations, prices (such as commodity, equity or debt prices), valuations of comparable instruments, foreign exchange rates and credit curves.

The following table presents, as of December 31, 2022, the Company's primary level 3 financial instruments, the valuation techniques used to measure the fair value of those financial instruments, the significant unobservable inputs, the range of values for those inputs and the weighted or arithmetic averages of such inputs. While the determination to classify an instrument within level 3 is based on the significance of the unobservable inputs to the overall fair value measurement, level 3 financial instruments typically include observable components (that is, components that are actively quoted and can be validated to external sources) in addition to the unobservable components. The level 1 and/or level 2 inputs are not included in the table.

The range of values presented in the table is representative of the highest and lowest level input used to value the significant groups of instruments within a product/instrument classification. Where provided, the weighted averages of the input values presented in the table are calculated based on the fair value of the instruments that the input is being used to value.

In the Company's view, the input range, weighted and arithmetic average values do not reflect the degree of input uncertainty or an assessment of the reasonableness of the Company's estimates and assumptions. Rather, they reflect the characteristics of the various instruments held by the Company and the relative distribution of instruments within the range of characteristics. For example, two option contracts may have similar levels of market risk exposure and valuation uncertainty, but may have significantly different implied volatility levels because the option contracts have different underlyings, tenors, or strike prices. The input range and weighted average values will therefore vary from period-to-period and parameter-to-parameter based on the characteristics of the instruments held by the Company at each Statement of Financial Condition date.

Level 3 inputs

Product/instrument[(a)(b)]	Fair value (in thousands)	Principal valuation technique	Unobservable inputs	Range of input values			Average[(c)]
Financial instruments owned	$ 11,152,058	Option pricing	Bermudan switch value	5%	–	11%	7%
			Interest rate correlation	(82)%	–	89%	16%
			IR-FX correlation	(35)%	–	60%	7%
			Equity correlation	0%	–	100%	71%
			Equity-FX correlation	(55)%	–	21%	(21)%
			Equity-IR correlation	(5)%	–	30%	7%
Short-term borrowings and long-term debt	11,152,748	Option pricing	Bermudan switch value	5%	–	11%	7%
			Interest rate correlation	(82)%	–	89%	16%
			IR-FX correlation	(35)%	–	60%	7%
			Equity correlation	0%	–	100%	71%
			Equity-FX correlation	(55)%	–	21%	(21)%
			Equity-IR correlation	(5)%	–	30%	7%

(a) The inputs presented for each valuation technique in the table are, in some cases, not applicable to every instrument valued using the technique as the characteristics of the instruments can differ.

(b) These instruments represent structured notes issued to and by the Company. The structured notes are predominantly financial instruments that contain embedded derivatives. The estimate of the fair value of the structured notes includes the derivative features embedded within the instruments. The significant unobservable inputs are broadly consistent with those presented for derivatives.

(c) Amounts represent weighted averages except for derivative related inputs where arithmetic averages are used.

Changes in and ranges of unobservable inputs

The following discussion provides a description of the impact on a fair value measurement of a change in each unobservable input in isolation, and the interrelationship between unobservable inputs, where relevant and significant. The impact of changes in inputs may not be independent, as a change in one unobservable input may give rise to a change in another unobservable input. Where relationships do exist between two unobservable inputs, those relationships are discussed below. Relationships may also exist between observable and unobservable inputs (for example, as observable interest rates rise, unobservable prepayment rates decline); such relationships have not been included in the discussion below. In addition, for each of the individual relationships described below, the inverse relationship would also generally apply.

The following discussion also provides a description of attributes of the underlying instruments and external market factors that affect the range of inputs used in the valuation of the Company's positions.

Correlation – Correlation is a measure of the relationship between the movements of two variables. Correlation is a pricing input for a derivative product where the payoff is driven by one or more underlying risks. Correlation inputs are related to the type of derivative (e.g., interest rate, credit, equity, foreign exchange and commodity) due to the nature of the underlying risks. When parameters are positively correlated, an increase in one parameter will result in an increase in the other parameter. When parameters are negatively correlated, an increase in one parameter will result in a decrease in the other parameter. An increase in correlation can result in an increase or a decrease in a fair value measurement. Given a short correlation position, an increase in correlation, in isolation, would generally result in a decrease in a fair value measurement.

The level of correlation used in the valuation of derivatives with multiple underlying risks depends on a number of factors including the nature of those risks. For example, the correlation between two credit risk exposures would be different than that between two interest rate risk exposures. Similarly, the tenor of the transaction may also impact the correlation input, as the relationship between the underlying risks may be different over different time periods. Furthermore, correlation levels are very much dependent on market conditions and could have a relatively wide range of levels within or across asset classes over time, particularly in volatile market conditions.

Bermudan switch value – The switch value is the difference between the overall value of a Bermudan swaption, which can be exercised at multiple points in time, and its most expensive European swaption and reflects the additional value that the multiple exercise dates provide the holder. Switch values are dependent on market conditions and can vary greatly depending on a number of factors, such as the tenor of the underlying swap as well as the strike price of the option. An increase in switch value, in isolation, would generally result in an increase in a fair value measurement.

Changes in level 3 recurring fair value measurements

The following tables include a rollforward of the Statements of Financial Condition amounts (including changes in fair value) for financial instruments classified by the Company within level 3 of the fair value hierarchy for the years ended December 31, 2022 and 2021. When a determination is made to classify a financial instrument within level 3, the determination is based on the significance of the unobservable inputs to the overall fair value measurement. However, level 3 financial instruments typically include, in addition to the unobservable or level 3 components, observable components (that is, components that are actively quoted and can be validated to external sources); accordingly, the gains and losses in the following tables include changes in fair value due in part to observable factors that are part of the valuation methodology.

Fair value measurements using significant unobservable inputs										
As of December 31, 2022 (in thousands)	Fair value, January 1, 2022	Total realized/ unrealized gains/ (losses)[a]	Purchases	Sales	Issuances	Settlements	Transfers into level 3	Transfers (out of) level 3	Fair value, Dec. 31, 2022	Change in unrealized gains/ (losses) related to financial instruments owned at Dec. 31, 2022[a]
Assets										
Financial instruments owned	$ 8,325,795	$(1,309,128)	$ 7,547,453	$ –	$ –	$(3,007,526)	$ 25,933	$ (430,469)	$11,152,058	$(1,021,713)

Fair value measurements using significant unobservable inputs										
As of December 31, 2022 (in thousands)	Fair value, January 1, 2022	Total realized/ unrealized (gains)/ losses[a]	Purchases	Sales	Issuances	Settlements	Transfers into level 3	Transfers (out of) level 3	Fair value, Dec. 31, 2022	Change in unrealized (gains)/ losses related to financial instruments owned at Dec. 31, 2022[a]
Liabilities										
Short-term borrowings	$ 116,326	$ (4,605)	$ –	$ –	$ 203,176	$ (147,639)	$ –	$ (587)	$ 166,671	$ 2,125
Long-term debt	8,209,211	(1,299,962)	–	–	7,345,216	(2,862,786)	26,021	(431,623)	10,986,077	(1,028,233)

Fair value measurements using significant unobservable inputs										
As of December 31, 2021 (in thousands)	Fair value, January 1, 2021	Total realized/ unrealized gains/ (losses)[a]	Purchases	Sales	Issuances	Settlements	Transfers into level 3	Transfers (out of) level 3	Fair value, Dec. 31, 2021	Change in unrealized gains/ (losses) related to financial instruments owned at Dec. 31, 2021[a]
Assets										
Financial instruments owned	$ 6,686,661	$ 859,409	$ 5,350,672	$ –	$ –	$(4,425,601)	$ 30,824	$ (176,170)	$ 8,325,795	$ 598,325

As of December 31, 2021 (in thousands)	Fair value, January 1, 2021	Total realized/ unrealized (gains)/ losses[a]	Purchases	Sales	Issuances	Settlements	Transfers into level 3	Transfers (out of) level 3	Fair value, Dec. 31, 2021	Change in unrealized (gains)/ losses related to financial instruments owned at Dec. 31, 2021[a]
	Fair value measurements using significant unobservable inputs									
Liabilities										
Short-term borrowings	$ 112,646	$ 9,148	$ –	$ –	$ 223,021	$ (228,489)	$ –	$ –	$ 116,326	$ 2,219
Long-term debt	6,574,572	847,666	–	–	5,129,740	(4,197,680)	30,824	(175,911)	8,209,211	595,878

(a) Reported in principal transactions revenue in the Statements of Income/(Loss) and Comprehensive Income/(Loss).

Transfers between levels for instruments carried at fair value on a recurring basis

During the year ended December 31, 2022, significant transfers from level 3 into level 2 included the following:

- $430.5 million of financial instruments owned and $431.6 million of long-term debt as a result of an increase in observability and a decrease in the significance of unobservable inputs.

During the year ended December 31, 2021, significant transfers from level 3 into level 2 included the following:

- $176.2 million of financial instruments owned and $175.9 million of long-term debt as a result of an increase in observability and a decrease in the significance of unobservable inputs.

All transfers are based on changes in the observability and/or significance of the valuation inputs and are assumed to occur at the beginning of the quarterly period in which they occur.

Additional disclosures about the fair value of financial instruments that are not carried on the Statements of Financial Condition at fair value

U.S. GAAP requires disclosure of the estimated fair value of certain financial instruments, which are included in the following table. Certain financial instruments that are not carried at fair value on the Statements of Financial Condition are carried at amounts that approximate fair value, due to their short-term nature and generally negligible credit risk. These instruments include cash, receivables from affiliates and other, other assets, short-term borrowings, payables to affiliates and other, and other liabilities and accrued expenses.

The following table presents by fair value hierarchy classification the carrying values and estimated fair values as of December 31, 2022 and 2021, of financial assets and liabilities, excluding financial instruments that are carried at fair value on a recurring basis, and their classification within the fair value hierarchy.

	As of December 31, 2022					As of December 31, 2021				
		Estimated fair value hierarchy					Estimated fair value hierarchy			
(in thousands)	Carrying value	Level 1	Level 2	Level 3	Total estimated fair value	Carrying value	Level 1	Level 2	Level 3	Total estimated fair value
Financial assets										
Cash	$ 174,307	$ 174,307	$ –	$ –	$ 174,307	$ 214,700	$ 214,700	$ –	$ –	$ 214,700
Receivables	148,244	–	148,244	–	148,244	52,578	–	52,578	–	52,578
Other assets	11,785	–	11,785	–	11,785	–	–	–	–	–
Financial liabilities										
Short-term borrowings	$ 21,612	$ –	$ 21,612	$ –	$ 21,612	$ –	$ –	$ –	$ –	$ –
Payables	28,593	–	28,593	–	28,593	18,392	–	18,392	–	18,392
Other liabilities and accrued expenses	33,430	–	33,430	–	33,430	96	–	96	–	96

4. Fair value option

The fair value option provides an option to elect fair value for selected financial assets, financial liabilities and unrecognized firm commitments.

The Company has elected to measure certain instruments at fair value for several reasons, including to mitigate income statement volatility caused by the differences in the measurement basis of elected instruments (e.g., certain instruments that otherwise would be accounted for on an accrual basis) while the associated risk management arrangements are accounted for on a fair value basis, as well as to better reflect those instruments that are managed on a fair value basis.

The Company's election of fair value includes the following instruments:

- Structured notes and other hybrid instruments, which are predominantly financial instruments that contain embedded derivatives.

Changes in fair value under the fair value option election

The following table presents the changes in fair value included in the Statements of Income/(Loss) and Comprehensive Income/(Loss), which are all recorded in principal transactions, for the years ended December 31, 2022 and 2021, for items for which the fair value option was elected. The profit and loss information presented in the following table only includes the financial instruments that were elected to be measured at fair value; related risk management instruments, which are required to be measured at fair value, are not included in the table.

	Principal transactions	
(in thousands)	2022	2021
Financial instruments owned:		
Debt and equity instruments	$ (2,774,896)	$ 1,920,165
Short-term borrowings[(a)]	17,490	(22,497)
Long-term debt[(a)]	2,801,171	(1,897,051)

(a) Unrealized gains/(losses) due to instrument-specific credit risk (DVA) for liabilities for which the fair value option has been elected are recorded in AOCI, while realized gains/(losses) are recorded in principal transactions revenue. Realized gains/(losses) due to instrument-specific credit risk recorded in principal transactions revenue were not material for the years ended December 31, 2022 and 2021.

Difference between aggregate fair value and aggregate remaining contractual principal balance outstanding

The following table reflects the difference between the aggregate fair value and the aggregate remaining contractual principal balance outstanding as of December 31, 2022 and 2021, for long-term debt for which the fair value option has been elected.

	2022			2021		
(in thousands)	Contractual principal outstanding	Fair value	Fair value over/(under) contractual principal outstanding	Contractual principal outstanding	Fair value	Fair value over/(under) contractual principal outstanding
Long-term debt[(a)]						
Principal-protected debt	$ 6,907,631 [(b)]	$ 6,824,270	$ (83,361)	$ 1,066,310 [(b)]	$ 1,339,106	$ 272,796
Nonprincipal-protected debt	NA	22,403,520	NA	NA	16,209,811	NA
Total long-term debt	**NA**	**$ 29,227,790**	**NA**	**NA**	**$ 17,548,917**	**NA**

(a) Remaining contractual principal is not applicable to nonprincipal-protected notes. Unlike principal-protected structured notes, for which the Company is obligated to return a stated amount of principal at the maturity of the note, nonprincipal-protected structured notes do not obligate the Company to return a stated amount of principal at maturity, but to return an amount based on the performance of an underlying variable or derivative feature embedded in the note. The debt, both principal-protected and nonprincipal-protected, reflects unsecured and unsubordinated obligations of the Company, the payment on which is fully and unconditionally guaranteed by JPMorgan Chase. Any payment on any such debt is subject to the credit risk of the Company, as issuer of the debt, and the credit risk of JPMorgan Chase, as guarantor of the debt.
(b) Where the Company issues principal-protected zero-coupon or discount notes, the balance reflects the contractual principal payment at maturity or, if applicable, the contractual principal payment at the Company's next call date.

5. Noninterest revenue

Principal transactions revenue

Principal transactions revenue is driven by many factors, including:

- the bid-offer spread, which is the difference between the price at which a market participant is willing and able to sell an instrument to the Company and the price at which another market participant is willing and able to buy it from the Company, and vice versa; and
- realized and unrealized gains and losses on financial instruments, including those accounted for under the fair value option.
  - Realized gains and losses result from the sale of instruments, closing out or termination of transactions, or interim cash payments.
  - Unrealized gains and losses result from changes in valuation.

The following table presents for the years end December 31, 2022 and 2021 all realized and unrealized gains/(losses) recorded in principal transactions revenue. Principal transactions revenue is presented primarily by instrument type.

(in thousands)	2022	2021
Contract type		
Interest rate	$ 55,017	$ 18,082
Credit	533	–
Foreign exchange	318	123
Equity	(80,188)	36,850
Commodity	895	–
Total principal transactions	**$ (23,425)**	**$ 55,055**

6. Interest expense

Interest expense is recorded in the Statements of Income/(Loss) and Comprehensive Income/(Loss) and classified based on the nature of the underlying liability. Interest expense does not include the interest accruals for financial instruments containing embedded derivatives which would be separately accounted for in accordance with U.S. GAAP absent the fair value option election; for those instruments, all changes in fair value, including any interest elements, are primarily reported in principal transactions revenue in the Statements of Income/(Loss) and Comprehensive Income/(Loss). Details of interest expense for the years ended December 31, 2022 and 2021, are as follows.

(in thousands)	2022	2021
Structured products	$ 66,545	$ 1,535
Other	1,608	191
Total interest expense	**$ 68,153**	**$ 1,726**

7. Short-term borrowings

The following is a summary of the Company's variable rate short-term borrowings, which have maturities of less than one year, at December 31, 2022 and 2021.

	2022			2021		
	Amount (in thousands)	Interest rates	Secured/ unsecured	Amount (in thousands)	Interest rates	Secured/ unsecured
Structured notes	$ 848,657	Various[(a)]	Unsecured	$ 378,470	Various[(a)]	Unsecured
Other	21,612	NA	Unsecured	–	NA	Unsecured
Total	**$ 870,269**			**$ 378,470**		

(a) The interest rates are based on the performance of various equity-linked and other indexed instruments. The Company has elected to measure these instruments at fair value under the fair value option.

8. Long-term debt

The following table is a summary of long-term debt carrying values representing the Company's unsecured long-term structured notes (including unamortized premiums and discounts, issuance costs, valuation adjustments and fair value adjustments, where applicable) by remaining contractual maturity as of December 31, 2022 and 2021. The interest rates are based on the performance of various equity-linked and other indexed instruments. The Company has elected to measure these instruments at fair value under the fair value option.

		2022				2021			
(in thousands)		Under 1 year	1 - 5 years	After 5 years	Total	Under 1 year	1 - 5 years	After 5 years	Total
Long-term debt	Variable rate notes	$ 9,869,213	$ 17,348,368	$ 2,010,209	$ 29,227,790	$ 5,799,286	$ 10,962,863	$ 786,768	$ 17,548,917

9. Related parties

The Company regularly enters into transactions with JPMorgan Chase affiliates predominantly by lending through inter-affiliate note arrangements the net proceeds from structured notes offerings. Balances with related parties as of December 31, 2022 and 2021, are listed in the following table.

(in thousands)	2022	2021
Assets		
Cash	$ 169,260	$ 214,700
Receivables	138,422	52,017
Financial instruments owned, at fair value	30,047,850	17,922,073
Liabilities		
Short-term borrowings (included $20,920 and $2,704 at fair value)	$ 30,126	$ 2,704
Payables	26,460	15,357
Long-term debt, at fair value	1,374,522	1,503,459

Revenue and expense-related transactions with these related parties for the years ended December 31, 2022 and 2021, are listed in the following table.

(in thousands)	2022	2021
Interest expense		
Other	$ 1,608	$ 191
Noninterest revenues/(losses)		
Principal transactions	(2,076,472)	1,711,853
Other	4,660	301
Expenses		
Management fees and allocated corporate overhead	1,806	348

10. Accumulated other comprehensive income/(loss)

AOCI includes the after-tax change in unrealized gains and losses on fair value option elected liabilities arising from changes in the Company's own credit risk (DVA). Pre-tax and after-tax considerations do not impact the components of AOCI. Balances as of December 31, 2022 and 2021, are listed in the following table.

(in thousands)	
Total accumulated other comprehensive loss at December 31, 2021	$ (56,629)
DVA on fair value option elected liabilities	71,931
Total accumulated other comprehensive income at December 31, 2022	**$ 15,302**

(in thousands)	
Total accumulated other comprehensive loss at December 31, 2020	$ (36,622)
DVA on fair value option elected liabilities	(20,007)
Total accumulated other comprehensive income at December 31, 2021	**$ (56,629)**

11. Contingencies

Litigation

In the ordinary course of business the Company may become a defendant in legal proceedings in connection with its debt issuance business. In accordance with the provisions of U.S. GAAP for contingencies, the Company accrues for a litigation-related liability when it is probable that such a liability has been incurred and the amount of the loss can be reasonably estimated. The Company evaluates its outstanding legal proceedings, if any, periodically to assess whether a litigation reserve should be established.

While the outcome of litigation is inherently uncertain, the Company believes, based upon its current knowledge, and after consultation with counsel, that there are no pending or threatened legal proceedings affecting the Company that would require the establishment of a litigation reserve. There is no assurance that the Company will not need to establish a reserve, or to adjust the amount of such a reserve, for a litigation-related liability in the future.

12. Subsequent events

The Company has performed an evaluation of events that have occurred subsequent to December 31, 2022, and through April 17, 2023 (the date of the filing of this report). There have been no material subsequent events that occurred during such period that would require disclosure or recognition on the Financial Statements as of December 31, 2022.