

NOVEMBER 2019

# S&P Economic Cycle Factor Rotator Index

# J.P.Morgan

## Hypothetical and Actual Historical Monthly and Annual Returns

Backtested using proxies  Backtested  Actual

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
1995								0.05%	1.59%	1.93%	4.22%	0.73%	8.76%
1996	0.05%	-1.39%	-1.32%	-0.99%	-0.53%	0.89%	-1.43%	-0.26%	2.38%	1.54%	3.73%	-1.98%	0.51%
1997	2.29%	1.11%	-2.65%	2.70%	0.92%	2.08%	3.97%	-2.54%	1.88%	0.07%	0.69%	0.75%	11.63%
1998	1.55%	2.09%	1.26%	0.61%	-0.45%	0.04%	-1.53%	-2.09%	4.28%	0.64%	-0.18%	2.50%	8.89%
1999	-1.43%	-3.53%	1.68%	-0.65%	-1.79%	0.33%	-1.18%	-1.63%	0.64%	0.56%	-1.34%	2.00%	-6.30%
2000	-2.90%	1.99%	3.75%	-1.32%	0.04%	-0.43%	0.86%	0.91%	0.20%	0.83%	0.26%	2.88%	7.12%
2001	-0.20%	1.12%	-0.15%	0.76%	0.39%	-0.30%	1.47%	0.54%	-4.50%	0.92%	1.38%	0.07%	1.39%
2002	0.53%	2.05%	0.58%	1.53%	1.16%	-1.38%	-4.59%	1.87%	-1.58%	-0.50%	0.23%	1.37%	1.09%
2003	-2.18%	-0.18%	0.07%	3.32%	4.84%	-0.25%	-1.79%	0.68%	1.44%	1.80%	0.24%	4.13%	12.51%
2004	1.36%	1.77%	0.53%	-2.91%	0.16%	0.89%	-1.13%	1.21%	1.18%	0.79%	2.31%	2.24%	8.61%
2005	-1.20%	1.00%	-0.41%	-1.84%	2.79%	0.91%	1.62%	1.38%	1.00%	-0.42%	0.90%	0.17%	5.96%
2006	1.64%	-2.03%	1.06%	0.36%	-1.38%	0.21%	0.04%	0.71%	1.77%	1.03%	0.17%	1.62%	5.26%
2007	0.60%	-0.04%	0.11%	1.49%	0.63%	-1.35%	-2.04%	0.61%	0.54%	0.13%	0.39%	-1.30%	-0.29%
2008	-0.13%	0.51%	-0.51%	-0.94%	-1.19%	-3.38%	0.10%	1.78%	0.14%	-1.45%	4.19%	2.23%	1.15%
2009	-1.93%	-1.52%	3.00%	-0.60%	0.03%	-0.47%	2.01%	2.72%	1.79%	-0.87%	2.20%	-0.48%	5.88%
2010	0.82%	1.29%	1.94%	1.98%	-1.57%	-0.69%	2.50%	0.29%	3.04%	1.24%	-1.38%	1.71%	11.63%
2011	1.28%	1.42%	0.37%	2.03%	0.33%	-1.19%	-0.84%	-1.38%	-1.51%	2.38%	0.01%	0.31%	3.16%
2012	2.05%	1.52%	1.58%	1.21%	-3.30%	2.59%	1.49%	2.23%	1.21%	0.00%	0.60%	1.54%	13.35%
2013	3.08%	0.00%	2.46%	0.24%	-2.31%	-0.80%	2.03%	-1.45%	2.17%	2.86%	1.93%	0.35%	10.89%
2014	-1.25%	2.15%	0.81%	3.75%	1.26%	0.65%	-0.30%	3.52%	-0.55%	0.59%	1.40%	-0.66%	11.82%
2015	0.70%	2.23%	-0.91%	-0.28%	-0.11%	-1.59%	-0.60%	-3.92%	-0.36%	2.40%	-0.41%	0.15%	-2.81%
2016	0.60%	1.67%	2.50%	0.80%	-0.31%	2.11%	1.80%	-0.46%	0.03%	-0.78%	2.29%	1.29%	12.11%
2017	0.47%	2.22%	-1.68%	0.38%	1.27%	0.67%	1.21%	0.06%	1.47%	0.41%	3.74%	0.35%	10.99%
2018	4.86%	-2.76%	-1.35%	-0.30%	0.81%	-0.13%	1.40%	2.07%	-0.26%	-5.84%	0.22%	-0.91%	-2.51%
2019	2.71%	0.86%	0.91%	0.07%	-3.45%	3.03%	-0.59%	-2.18%	1.36%	0.11%			2.67%

Please refer to the "Selected Risks" and "Disclaimer" on the following page.

Historical performance measures for the S&P Economic Cycle Factor Rotator Index (the "Index") represent hypothetical backtested performance from August 1, 1995 through August 15, 2016, and actual performance from August 16, 2016 through October 31, 2019. Please see "Use of hypothetical backtested returns" at the end of this presentation for additional information related to backtesting.

Each Equity Constituent is subject to a notional financing cost based on 3-month cash rates, which is calculated based on 2M and 3M USD LIBOR. However, from August 4, 2016 to May 1, 2017, in lieu of the actual levels of 2M and 3M USD LIBOR, the notional financing cost for each Equity Constituent was calculated using 0.6111% and 0.7776% respectively (the levels of 2M and 3M USD LIBOR as of August 4, 2016). As a result, the performance of the Index between August 4, 2016 and May 3, 2017 (the last date on which the stale LIBOR levels impacted the notional financing cost calculation) would have been cumulatively lower by -0.1131% had the notional financing cost applied to the Equity Constituents been calculated using actual LIBOR levels. Furthermore, effective February 1, 2017, the Index began rounding the CFNAI to the nearest basis point (0.01%) for purposes of determining the applicable monthly Equity Constituent. The performance of the Index prior to February 1, 2017 does not reflect this change, and the Index has limited operating history based on the rounded CFNAI.

The hypothetical backtested and historical levels presented herein have not been verified by J.P. Morgan, and hypothetical historical levels have inherent limitations. PAST PERFORMANCE AND BACKTESTED PERFORMANCE ARE NOT INDICATIVE OF FUTURE RESULTS.

Investing in the notes linked to the Index involves a number of risks. See "Selected Risks" on page 2 of this document, "Risk Factors" in the relevant product supplement and underlying supplement and "Selected Risk Considerations" in the relevant pricing supplement.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of the notes or passed upon the accuracy or the adequacy of this document or the accompanying product supplement, underlying supplement, prospectus supplement or prospectus. Any representation to the contrary is a criminal offense.

The notes are not bank deposits, are not insured by the Federal Deposit Insurance Corporation or any other governmental agency and are not obligations of, or guaranteed by, a bank.

### Selected Risks

- Our affiliate, J.P. Morgan Securities LLC ("JPMS"), worked with S&P Dow Jones Indices LLC in developing the guidelines and policies governing the composition and calculation of the Index.
- The Equity Constituents are excess price return indices that include the deduction of a notional financing cost based on the relevant LIBOR rates.
- Our parent company, JPMorgan Chase & Co. ("JPMC"), is one of the companies that make up the S&P 500® Index and may be included in three Equity Constituents.
- The Index may not be successful or outperform any alternative strategy that might be employed in respect of the Equity Constituents and the Bond Constituent (the "Underlying Indices") and the CFNAI.
- The Index may not approximate its target volatility.
- The Index may be significantly uninvested.
- The Index may be more heavily influenced by the performance of the relevant Equity Constituent than the performance of the Bond Constituent in general over time.
- A significant portion of the Index's exposure may be allocated to the Bond Constituent.
- Changes in the value of the relevant Underlying Indices may offset each other or may become correlated in decline.
- The investment strategy used to construct the Index involves daily adjustments to its notional exposure to the Underlying Indices.
- There is no assurance that the strategies employed by the Equity Constituents will be successful.
- The Equity Constituents are subject to concentration risk.
- The Bond Constituent is subject to significant risks associated with futures contracts.
- Uncertainty about the future of LIBOR may affect LIBOR rates.
- The Index, which was established on August 16, 2016, and some of the Equity Constituents, which were established recently, have limited operating histories and may perform in unanticipated ways.
- The Bond Component is an "excess return" index and not a "total return" index because it does not reflect interest that could be earned on funds notionally committed to the trading of futures contracts.
- Negative roll returns associated with futures contracts may adversely affect the performance of the Bond Component. Suspension or disruptions of market trading in futures contracts may adversely affect the Index.

*The selected risks set forth above pertain to the Index identified on the cover of this document and are not exhaustive. You should also review carefully the related "Select Considerations" section in the relevant Index supplement.*

### Disclaimer

#### Important Information

The information contained in this document is for discussion purposes only. Any information relating to performance contained in these materials is illustrative and no assurance is given that any indicative returns, performance or results, whether historical or hypothetical, will be achieved. All information herein is subject to change without notice, however, J.P. Morgan undertakes no duty to update this information. In the event of any inconsistency between the information presented herein and any other offering documents, the other offering documents shall govern.

#### Use of hypothetical backtested returns

Any backtested historical performance information included herein is hypothetical. The constituents may not have traded together in the manner shown in the hypothetical backtest of the Index included herein, and no representation is being made that the Index will achieve similar performance. There are frequently significant differences between hypothetical backtested performance and actual subsequent performance.

The results obtained from backtesting information should not be considered indicative of the actual results that might be obtained from an investment or participation in a financial instrument or transaction referencing the Index. J.P. Morgan provides no assurance or guarantee that investments linked to the Index will operate or would have operated in the past in a manner consistent with these materials. The hypothetical historical levels presented herein have not been verified by an independent third party, and such hypothetical historical levels have inherent limitations. In addition, the monthly selection of the Equity Constituents reference the level and trend of the CFNAI, and the selection methodology applied with respect to any period of back-tested performance could reflect subsequent restatements or corrections of the CFNAI, even though those restatements or corrections would not have been available had the relevant Index been calculated on a live basis. Finally, the selection methodologies of the S&P 500® Buyback FCF Excess Return Index and the S&P 500® Pure Value Excess Return Index reference financial information reported by the issuers of the securities that are eligible to be included in the relevant index, and the selection methodology applied with respect to any period of back-tested performance could reflect subsequent restatements or corrections of that financial information, even though those restatements or corrections would not have been available had the relevant Index been calculated on a live basis. Alternative simulations, techniques, modeling or assumptions might produce significantly different results and prove to be more appropriate. Actual results will vary, perhaps materially, from the hypothetical backtested returns and allocations presented in this document. HISTORICAL AND BACKTESTED PERFORMANCE AND ALLOCATIONS ARE NOT INDICATIVE OF FUTURE RESULTS.

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