

J.P. Morgan 5-Year Credit Default Swaps: Market Role, Hedging Strategies, and Risk Implications

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Abstract. This research focuses on the 5-Years Credit Default Swaps (CDS) of J.P. Morgan, as a crucial product for risk transformation and financial system monitoring purposes. The 5-Year CDS contract is the benchmark for measuring corporate default risk, utilized throughout the world by investors, regulators and academics. The paper opens with an armchair guide to the CDS market, and makes the case that J.P. Morgan is an especially good poster-child for it. Next, this paper present the firm's financial status and past behaviour of its CDS spreads, emphasizing episodes like the 2008 crisis, COVID-19 outbreak, and the 2023 U.S. banking collapse. A hedging strategy is presented for institutional investors that own J.P. Morgan bonds, and by which CDS contracts reduce the amount of risk in a portfolio. The paper goes on to address more general market and regulatory implications of CDS trading such as risk reduction, systemic impacts, and constraints (e.g., basis risk and market liquidity). The results show that J.P. Morgan's 5-Year CDS plays its roles of hedging and risk monitoring only imperfectly on account of market imperfection constraints. The final section of the paper discusses potential directions for further research, such as index CDS, multi-factor risk models, and the role of artificial intelligence in credit risk forecasting.

Keywords: List the; keywords covered; in your paper. Credit Default Swaps; Hedging Strategy; Systemic Risk.

1. Introduction

Credit risk refers to the possibility that a borrower will fail to meet its financial obligations. Effective credit risk management is central not only for maintaining the profitability and stability of financial institutions but also for ensuring the smooth functioning of the financial system. Unchecked credit exposures can lead to widespread defaults and financial losses, which can then erode market confidence through a domino effect, and eventually lead to systemic disruptions and economic downturns even economic recessions, as showed by numerous financial crises over the past decades. Financial institutions have therefore developed a wide range of tools to identify, quantify, and mitigate credit risk, with derivatives playing an increasingly pivotal role.

Among these various credit derivative instruments, Credit Default Swaps (CDS) are especially powerful and meaningful. CDS which emerged in the 1990s are designed to transfer and hedge credit risk of a reference entity from one party to another. They allow protection buyers to pay a spread to sellers in exchange for compensation if the reference entity defaults [1]. This mechanism allows financial institutions to isolate credit risk from their balance sheets, providing greater flexibility in capital allocation, risk exposure management, and regulatory compliance. CDS quickly became the most traded credit derivative and were instrumental during the 2008 financial crisis [2].

The onset of the COVID-19 pandemic in early 2020 provides a compelling example of the critical role CDS can play in times of heightened uncertainty. The pandemic caused unprecedented volatility across global credit markets, increasing default risks and widening credit spreads. Financial institutions, such as J.P. Morgan Chase & Co., faced significant challenges for mitigating potential losses and maintaining financial stability. By employing the 5-Year CDS contract, the firm was able to hedge against credit risks and continue to meet its obligations despite market disruptions. For investors, the 5-Year CDS spread provides a direct measure of market-perceived creditworthiness. For regulators, it acts as an early warning indicator of systemic risk [3]. The 5-Year CDS contract has become the market standard. Its liquidity and wide use in regulatory stress testing make it the benchmark maturity.

This paper focuses on J.P. Morgan’s 5-Year CDS, examining its market role, hedging strategies, and associated risk implications. As the largest U.S. bank by assets, J.P. Morgan is both a reference entity and a major CDS dealer [4]. Its CDS spreads reflect not only the bank’s own credit risk but also broader market confidence. By studying J.P. Morgan’s 5-Year CDS, we gain insights into hedging strategies, systemic stability, and the role of CDS in modern finance.

2. Company Description

J.P. Morgan Chase & Co. is the biggest U.S. bank, with total assets of over USD 3.9 trillion in 2023 [5]. It has business in investment banking, asset management, consumer finance and risk management. The bank's Tier 1 capital ratio is comfortably above requirements, and it continues to hold strong credit ratings at A+/Aa2 reflecting a very sound financial position. With a long history of financial innovation and prudent risk management, J.P. Morgan plays a leading role in both the development and active use of derivative instruments.

J.P. Morgan is a major participant in the global CDS market. Like other systemically important financial institutions, it is subject to close scrutiny by regulators and the markets. Its 5-Year CDS spreads are a barometer of fear and greed in the market. In March 2020, spread increased from being at a baseline of 40 to over 120 basis points in the midst of the COVID-19 pandemic [6]. Likewise, during the 2023 U.S. banking crisis spreads widened modestly reflecting caution in the marketplace but relative resiliency compared to weak banks. Understanding its 5-year CDS not only sheds light on the firm’s risk management practices but also offers insight into how the CDS market functions as a channel for transferring and redistributing credit risk in the financial system. These episodes illustrate two reasons J.P. Morgan’s CDS is important for both academic analysis and risk management within industry.

3. Hedging Strategy

3.1. Using CDS to Hedge Bond Portfolios

Institutional investors such as pension funds or insurance companies often hold large quantities of J.P. Morgan bonds. While these bonds provide yield, they expose investors to default and spread risk. Buying J.P. Morgan’s 5-Year CDS is a straightforward hedge: the investor pays a spread but gains protection if J.P. Morgan defaults. The hedge ratio can be determined using CS01 (Credit Spread 01), which measures sensitivity to a 1 basis point spread change [7]. For example, if a bond portfolio has a CS01 of USD 50,000 and one CDS contract has a CS01 of USD 10,000, then five CDS contracts are required for a matched hedge.

In practice, the basis points of CDS and the relative hedging strategy are usually calculated as follows. Two legs are valued [8].

- (1) Premium leg (risk-neutral expectation of spread payments conditional on survival).
- (2) Protection leg (expected discounted loss on default).

Let payments be quarterly with $\Delta = 0.25$, maturity $T = 5$ years, payment dates $t_i = i\Delta$, $i = 1, \dots, 20$. Assume flat discounting $P(0, t) = \exp(-r t)$ and a constant hazard rate λ so that survival probability is $Q(t) = \exp(-\lambda t)$.

Premium leg (the ‘risky PV01’ or RPV01):

$$RPV01 = \sum_i P(0, t_i) \cdot \Delta \cdot Q(t_i) \quad (1)$$

Protection leg (discrete default between coupons):

$$Prot = (1 - R) \cdot \sum_i P(0, t_i) \cdot [Q(t_{i-1}) - Q(t_i)], \quad \text{with } Q(t_0) = 1 \quad (2)$$

At par, the quoted spread S satisfies:

$$S \cdot RPV01 = Prot \quad \Rightarrow \quad S_{par} = Prot / RPV01 \quad (3)$$

In practice S is quoted in basis points (bps), so $S_{bps} = 10,000 \cdot \text{Prot} / \text{RPV01}$. Note small accrual-on-default terms are ignored here for simplicity.

Regarding of CS01, which is the present value change for a 1 bp change in spread. For a CDS position of notional N, a first-order approximation is:

$$\Delta PV \approx \text{RPV01} \cdot \Delta \cdot S \cdot N \quad (4)$$

Hence,

$$\text{CS01}_{\text{CDS}} \approx \text{RPV01} \cdot 0.0001 \cdot N. \quad (5)$$

A natural hedge ratio to offset a bond's credit-spread exposure is:

$$\text{Hedge notional } N^* = \text{CS01}_{\text{bond}} / (\text{RPV01}_{\text{CDS}} \cdot 0.0001) \quad (6)$$

If the bond portfolio has $\text{CS01}_{\text{bond}} = \$50,000$ and a 5Y CDS per-\$1 notional $\text{RPV01} = 4.47$, then per \$1mm notional the CDS $\text{CS01} \approx 4.47 \times 0.0001 \times \$1,000,000 = \$447$ [2]. To hedge \$50,000 CS01, we need $N^* \approx 50,000 / 447 \approx \112mm of CDS protection [9].

3.2. Static vs Dynamic Hedging

There are two main approaches to CDS hedging: static and dynamic. Static hedging involves purchasing protection at the start and holding it until maturity. This approach is simple but may suffer from mismatches if bond and CDS spreads diverge (basis risk). Dynamic hedging, in contrast, involves adjusting CDS positions as spreads or portfolio exposures change. While dynamic hedging is more accurate, it requires liquidity and incurs higher transaction costs [10].

To be more precise, Bond–CDS basis b is take into account, which is defined as $b = \text{ASW}_{\text{bond}} - S_{\text{CDS}}$. If $b \neq 0$, a static hedge will leave residual P&L [2]. One rule for dynamic hedging is:

- (1) Rebalance CDS notional when $|b|$ exceeds 10–15 bps.
- (2) Keep CS01 mismatch within $\pm 5\%$ of the portfolio's target CS01 [10].

A first-order P&L decomposition for a bond hedged with CDS is:

$$\Delta V_{\text{port}} \approx -\text{CS01}_{\text{bond}} \cdot \Delta S_{\text{bond}} + N \cdot \text{RPV01}_{\text{CDS}} \cdot \Delta S_{\text{CDS}} + \text{carry} - \text{costs} \quad (7)$$

If $\Delta S_{\text{bond}} \approx \Delta S_{\text{CDS}}$ but basis opens ($\Delta S_{\text{bond}} - \Delta S_{\text{CDS}} \neq 0$), residual P&L remains.

3.3. Practical Considerations

Hedging is hindered in practice by some factors. There are at least two reasons for this: the first one is that basis risk arises when CDS and bond spreads do not move together, which can happen because of liquidity or views in the market [2]. Secondly, one would have to take into account counterparty risk: if the seller of the CDS goes bust, so might your hedge (as occurred with AIG in 2008). Lastly, regulatory capital rules could impact hedge design due to the fact that CDS hedges with sufficient documentation can lower capital required under Basel III [3].

Consequently, multi-bond portfolio extension is usually adopted to prevent risk from the counterparty, and a portfolio of m bonds with CS01s $\{\text{CS01}_i\}$, an 'index-style' hedge uses a single CDS (or a CDS index) with notional:

$$N_{\text{index}} \approx (\sum_i w_i \cdot \text{CS01}_i) / (\text{RPV01}_{\text{index}} \cdot 0.0001) \quad (8)$$

where w_i are portfolio weights. This compresses operational complexity while tracking the portfolio's aggregate spread sensitivity.

4. Impact

4.1. Portfolio Risk Mitigation

Using JPM 5-Year CDS to hedge a JPM bond position mainly removes the first-order spread risk. In practice, companies match CS01, which means they size the CDS so that the portfolio's value barely changes if credit spreads move by 1 basis point (bp) [2, 6, 11].

4.2. Market Signals and Systemic Stability

JPM 5Y CDS is a fast, high-frequency signal of credit stress. It often moves earlier than bond spreads when risk rises, so investors and supervisors use it as an early warning and as an input to stress tests [6, 11]. A liquid CDS market helps transfer risk and discover prices—but during crises, margin and funding needs can spike at the same time, which the system must manage carefully.

4.3. Market Microstructure and Liquidity

A hedge is only as good as the market you trade it in. In calm times, depth is decent and bid–ask costs are manageable [2, 7]. In stress, non-default components of spreads (liquidity and risk aversion) grow, trading costs jump, and it becomes harder to adjust hedges [3, 4]. Post-crisis standardization and central clearing reduce legal and counterparty frictions, but they also introduce initial and variation margin that can rise quickly in volatile periods, which puts pressure on liquidity.

4.4. Constraints and Residual Risks

Even with good CS01 matching, some risks remain:

(1) Basis risk. Bond asset-swap (ASW) spreads and CDS spreads can diverge for technical reasons. A simple overlay is to rebalance when $|\text{basis}| > 10\text{--}15$ bps or when CS01 mismatch breaches $\pm 5\%$ [10].

(2) Model risk. Hedge ratios depend on curves, default intensity, and recovery. When these inputs drift, RPV01 and notionals can be off. Regular PV/CS01/CR01/RR01 checks and scenario tests help catch this [8, 9, 11].

(3) Counterparty/legal risk. Collateral terms, netting, and clearing matter. Clearing reduces bilateral risk but does not remove liquidity squeezes when many participants face margin calls simultaneously [3, 4].

4.5. Policy and Regulatory Implications

For regulators, the JPM 5Y CDS is both a firm-level and system-level indicator. Capital rules should recognize genuine hedges (with proper documentation and risk transfer) while still charging for residual risks [3]. Policy should also watch for pro-cyclical margins in cleared CDS and support transparent reporting without harming market-making capacity [4, 6]. Stress scenarios should shock spreads, liquidity, and margin together to reflect real crisis dynamics [11].

4.6. Implications for Issuers and Dealers

For issuers like JPM, the 5Y CDS affects funding costs and new-issue pricing: a wider CDS usually means a tougher primary market; a tighter, stable CDS helps issuance. Dealers juggle inventory risk and hedging costs; this shapes their quotes and market depth, which in turn affects how precisely investors can hedge [2, 6].

5. Conclusion

The 5-Year CDS of J.P. Morgan served as the focus of our analysis in this paper and was used for hedging and risk management purposes. The paper discussed the company's importance to the system, 5-Year CDS as a benchmark and hedging bond portfolios. The results indicated that CDS can be efficient in lowering the exposure to credit risk and have a market signaling role for systemic stress. But they are constrained by basis risk, liquidity restrictions and counterparty risk.

Future research should consider three areas:

(1) dissecting CDS indices such as CDX and iTraxx into broader hedging tools;

(2) incorporating new statistical and machine learning models in default probability estimation; and

(3) studying the regulatory effect of central clearing on CDS markets. J.P. Morgan's 5-Year CDS instrument will continue to be an invaluable benchmark for investors and regulators who wish to gain or mitigate a view on credit risk.

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