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Bill Ackman's and Perishing Square Portfolio

FINM3405

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Executive Summary:

This report provides a comprehensive analysis of Pershing Square Capital Management's hedging strategies during the COVID-19 pandemic, highlighting its portfolio composition, market exposure, and the critical decisions made to mitigate risks. Under the leadership of Bill Ackman, Pershing Square faced significant challenges due to its concentrated holdings in sectors such as hospitality and retail, which were severely impacted by the pandemic. The report examines the fund's market forecasts, the potential risks posed by the pandemic, and the various hedging strategies considered, including index futures, options, and credit default swaps (CDS).

Ackman's ultimate decision to implement a large-scale CDS strategy proved highly effective, yielding $2.65 billion in profits while safeguarding the fund's investments. The analysis delves into the quantitative aspects of this strategy, including contract sizes, positions, and market timing, and evaluates how the CDS trade met Pershing Square's hedging objectives. Additionally, the report discusses Pershing Square's partial liquidation of the CDS positions to capture gains as market conditions evolved.

The report concludes by demonstrating how the fund's proactive and strategic approach to hedging, combined with Ackman's deep market insights, enabled Pershing Square to navigate one of the most volatile periods in recent history. By effectively managing downside risk while maintaining its long-term investment philosophy, Pershing Square emerged stronger from the crisis, reinforcing the importance of adaptive and timely risk management in hedge fund operations.

Introduction:

Bill Ackman, founder and CEO of Pershing Square Capital Management, is widely recognised for his bold investment strategies, as well as his unique approach to increasing shareholder value (Pershing Square Foundation, 2024). Since being established in 2004, Pershing Square has built and maintained a reputation for being a hedge fund that acquires significant positions in companies, with the aim of influencing their operations to boost the company's value (Rothberg, 2016).

Ackman's investment philosophy is centred around value-oriented activist strategy investing that has a focus on long term investment horizons. Pershing Square's portfolio is composed of large positions in a relatively small number of companies (Hartman, 2024). This focus allows Ackman and his team the time to heavily engage with the management of the companies they invest in, aiming to take an active role in strategic decision-making and cash flow generation.

The fund's approach relies on comprehensive research and a willingness to take seemingly bold positions when market uncertainties are identified by Ackman and the research. In early 2020, Pershing Square's portfolio was heavily concentrated the hospitality, retail, and restaurant sectors. Key holdings of the fund included Hilton Worldwide, Restaurant Brands International, and Chipotle Mexican Grill (Stockcircle, 2020).

However, the outbreak of COVID-19 developed unprecedented challenges for companies within their existing portfolio. With the rapid rate of increase of Covid-19 cases, federal governments were forced to implement strict lockdown measures and public health mandates (Gupta, 2020). These global lockdowns halted economic activity, significantly impacted the sectors in which Perishing Portfolio held investments in. For example, Hilton Worldwide were hit with plummeting occupancy rates. Similarly, Restaurant Brands International and Chipotle Mexican Grill faced operational restrictions (Alvarez, 2023).

The pandemic's impact on consumer behaviour placed immense pressure on company revenues (Chan, 2021). This exposed Pershing Square to substantial risks, requiring an evaluation of hedging strategies to protect the fund's assets. As the pandemic unfolded, the investment decisions made would be critical in shaping Pershing Square's short-term performance and consequential long-term success.

Pershing's portfolio, exposure, forecasts, and objectives:

Pershing Square Capital Management has consistently adhered to a value-oriented, activist investment approach. The firm's concentrated portfolio typically consists of a small number of significant positions in large companies, allowing Ackman to interact with company management and influence strategic decisions (Hartman, 2024). This focus on active engagement with fundamentally strong, undervalued companies is key to Pershing Square's long-term investment strategy. However, this concentration also exposed the fund to substantial risk amongst certain market sectors, particularly as the COVID-19 pandemic began to affect global markets in 2020.

	Firm Name	Ticker Code	Number of Shares	Value (in $ million)	Share price	% Ownership	% of Fund Value	Board Seat	Inception Date
0	Chipotle Mexican Grill	CMG	8.619146e+07	1494.56	17.340000	0.0620	0.213	Yes	2016-08-01
1	Hilton Worldwide	HLT	1.055680e+07	1138.02	107.799661	0.0374	0.162	No	2018-10-01
2	Lowe's Companies	LOW	8.613212e+06	1001.20	116.240028	0.0112	0.143	No	2018-04-01
3	Restaurant Brands International	QSR	1.546818e+07	943.71	61.009759	0.0334	0.134	No	2012-06-01
4	Berkshire Hathaway (B)	BRK-B	4.015594e+06	901.22	224.430059	0.0029	0.128	No	2019-05-01

Table 1. Pershing's portfolio breakdown

As of early 2020, Pershing Square's portfolio included significant investments in sectors such as hospitality, retail, and restaurants; industries particularly vulnerable to the economic downturn caused by the pandemic. Some of the key holdings included Hilton Worldwide, Restaurant Brands International, and Chipotle Mexican Grill, all chosen for their strong brands, business models, and growth potential (Stockcircle, 2020). Under normal market conditions, these companies would align well with Pershing Square's value-investing philosophy.

However, the pandemic's impact on consumer behaviour and economic activity placed these businesses under severe financial pressure. The global lockdowns resulted in severe reductions in occupancy rates for Hilton and restrictions on restaurant operations for companies like Restaurant Brands International and Chipotle Mexican Grill (Alvarez, 2023). As the pandemic ensued, Ackman and his team had to consider adjusting their usual investment approach. The severe reduction in economic activity in the hospitality and restaurant sectors left Pershing Square's portfolio vulnerable to substantial losses. Figure 1 illustrates the impact of the pandemic on the overall value of Pershing Square's holdings during this period.

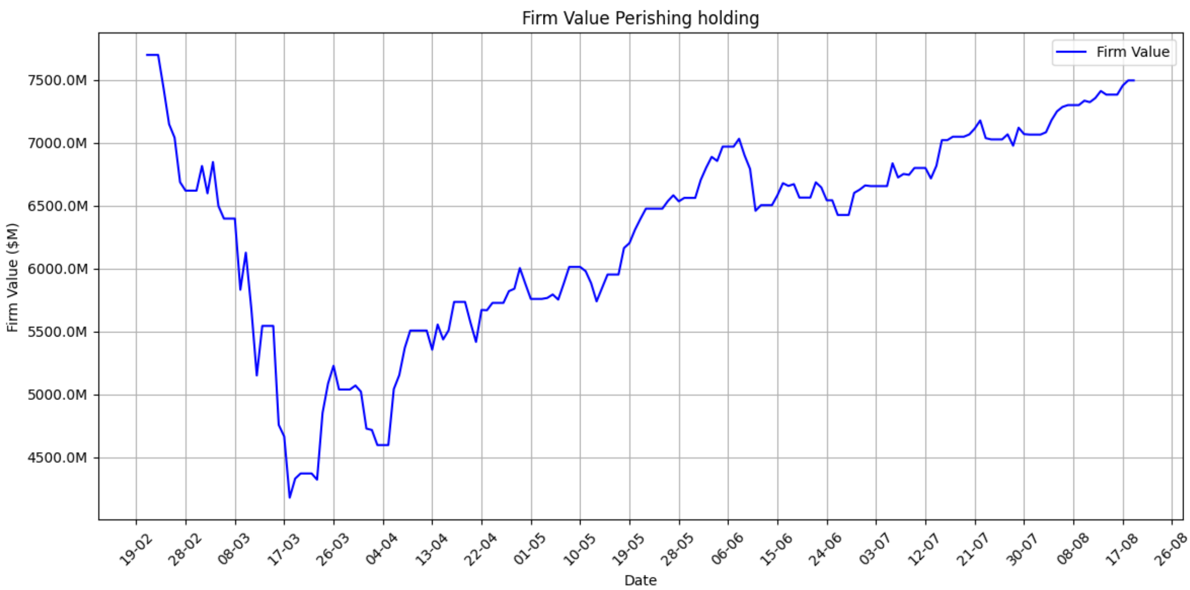

Figure 1. Pershing's firm value (21/02/20 - 21/08/20)

Ackman's team at Pershing Square concluded that COVID-19 was not merely a temporary disruption, but rather a major long-term challenge with profound implications for the global economy. Based on their analysis, Pershing Square anticipated a sustained period of economic uncertainty, with significant downside risks to the market, particularly the industries in which they held major positions. This led the team to re-evaluate the portfolio's exposure and consider the need for an effective hedging strategy to mitigate potential losses.

The primary objective for Pershing Square was to protect the portfolio from the severe market downturn that was expected to ensue following the pandemic. Given the concentrated nature of the fund's holdings, a market decline would disproportionately affect the portfolio, leading to a comprehensive hedging strategy needing to be formed. However, the challenge was to develop a hedging approach that would limit the downside risk without undermining the fund's long-term investment philosophy. Ackman and his team aimed to balance the need for protection with the goal of preserving the potential for future gains once the pandemic subsided.

In response to the global crisis, Pershing Square's hedging objectives centred around reducing exposure to market volatility while maintaining flexibility for future growth. The team explored several hedging options, including the use of S&P 500 index futures, index options, and credit default swaps (CDS). Each of these strategies was evaluated in terms of its ability to limit losses, manage ongoing cashflows, and adapt to market conditions as they evolved. Pershing Square's forecasts indicated that, while the short-term outlook was bleak, the long-term recovery potential for their core holdings remained intact. As such, their hedging strategy needed to protect against immediate downside risks without fully liquidating the portfolio and missing out on potential gains during the eventual recovery.

The decision to hedge was difficult, as Ackman's investment philosophy typically emphasises long-term value creation rather than short-term market timing. However, the unprecedented nature of the pandemic and its immediate impact on key sectors of Pershing Square's portfolio forced such a strategic shift. The fund's hedging strategy aimed to protect the portfolio from the worst of the downturn while positioning the fund to capitalise on opportunities once the market began to recover. This approach allowed Pershing Square to navigate the crisis while remaining aligned with its long-term investment goals.

Pershing Square's exposure to the hospitality and restaurant sectors left the fund highly vulnerable during the COVID-19 pandemic. The decision to hedge the portfolio was driven by the need to protect against short-term market declines while preserving the potential for future gains. This delicate balance between risk management and long-term growth remained central to Pershing Square's approach as the pandemic evolved.

Pershing's hedging options and deliberations:

To evaluate the hedging options, we assumed the positions were opened and assessed from the evaluation date of February 21, 2020. An optimal hedging strategy was applied to futures and options contracts, whilst for CDS and partial liquidation strategies, hedging positions were based on the notional value to Perishing Portfolio's value as of the evaluation date. Considerations of factors such as contract size, positioning, maturities, and market timing are outlined in the relevant Jupyter notebooks attached in Appendices 1–5. Refer to the appendix for a full analysis, including the literature review, graphs, and coding examples.

Partial Liquidation (Appendix 2)

One of the most straightforward options was to liquidate a portion or the entirety of the portfolio and convert the proceeds into cash. This strategy would have effectively removed Pershing Square's market exposure, mitigating the risk of further downside during the market collapse. The degree of liquidation was considered in various scenarios—partial (25%, 50%, 75%) and full liquidation.

The graph below demonstrates how each liquidation level would have affected the firm's portfolio value over time. As the market plummeted, even partial liquidation would have preserved capital, with full liquidation (red line) showing the least drawdown compared to the portfolio's original value. However, while liquidation offered downside protection, it would have also limited the potential for future gains once the market rebounded, which is evident as the portfolio values began recovering in the latter part of 2020.

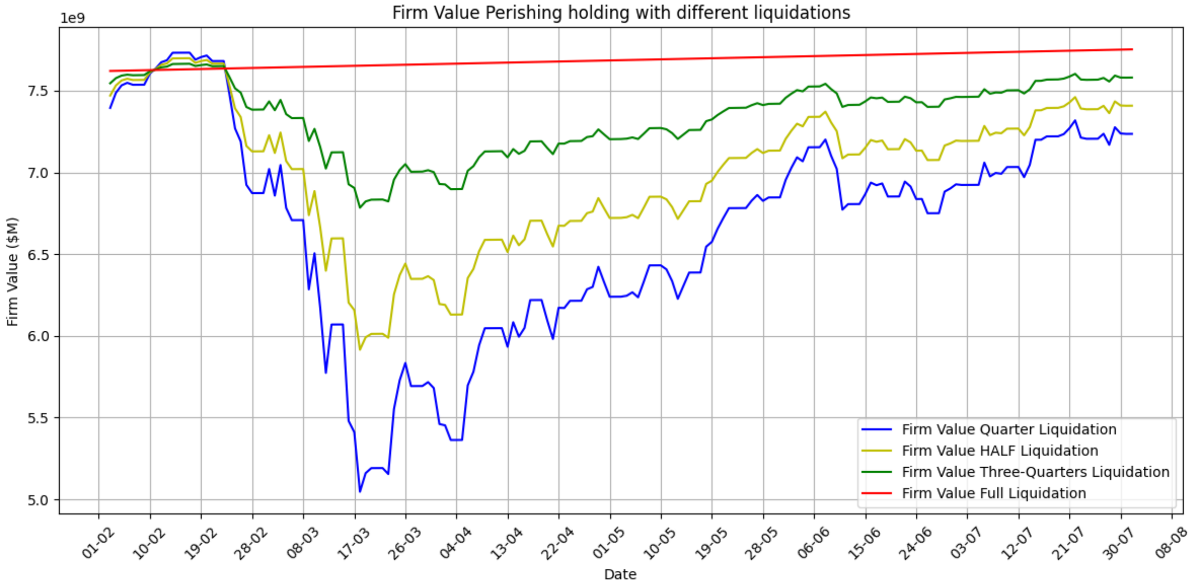

Figure 2. Pershing's firm value with different liquidation scenarios

Despite the safety of full liquidation, locking in losses and sacrificing potential future gains was not an ideal strategy. Liquidating a large volume of shares at once could result in significant additional losses, not only from selling assets at depressed prices but also due to the negative market impact of such a large-scale sale. These additional losses from large-scale liquidation were not incorporated into the figures presented above. Instead, the alternative hedging option involved shorting S&P 500 futures contracts, which would gain value as the market declined and help offset portfolio losses. This approach allowed for hedging without selling underlying assets, maintaining the long-term investment strategy.

Futures (Appendix 3)

The graph below illustrates the profitability of the futures hedging strategy compared to holding the portfolio unhedged. As shown, the futures hedge significantly reduced the firm's losses during the initial market decline in March 2020. The blue line, representing the profits with futures hedging, shows a marked improvement over the red line, which reflects the portfolio's performance without the hedge. This strategy allowed Pershing Square to mitigate short-term losses while maintaining exposure to a market recovery.

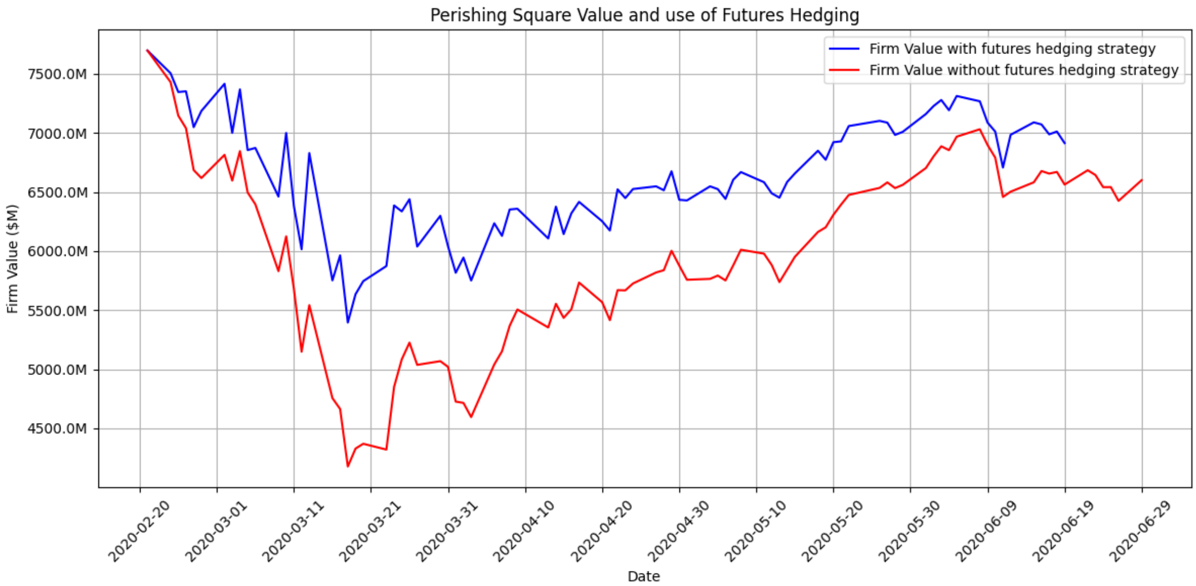

Figure 3. Pershing Square Value with different futures hedging strategies

One of the key considerations in using futures as a hedging instrument was the cost of carry, which is influenced by interest rates, dividends, and storage costs (Appendix 3.4.1). Figure 4 presents a sensitivity analysis of the cost of carry and its impact on future price forecasts at one week, one month, and two months after the evaluation date. Consider that the payoffs of a futures contract can be locked in by executing a reversing trade at a future point, providing flexibility in managing the hedge over time.

For Ackman's team, understanding these dynamics was crucial for determining both the timing and magnitude of the futures contracts necessary for effective hedging. Figure 4 outlines the impact of the cost of carry on the overall payoff, as well as how factors such as interest rates could influence the outcome. The contract price for the March-maturing futures contract was 3367.5, and any changes to dividends, interest rates, or storage costs that lowered the cost of carry (and by extension, the futures price at some later date) would result in a positive payoff. Analyses like these underscores that Ackman's team did not simply employ a futures strategy for its simplicity, but conducted an in-depth evaluation of how external factors could affect the hedge's performance.

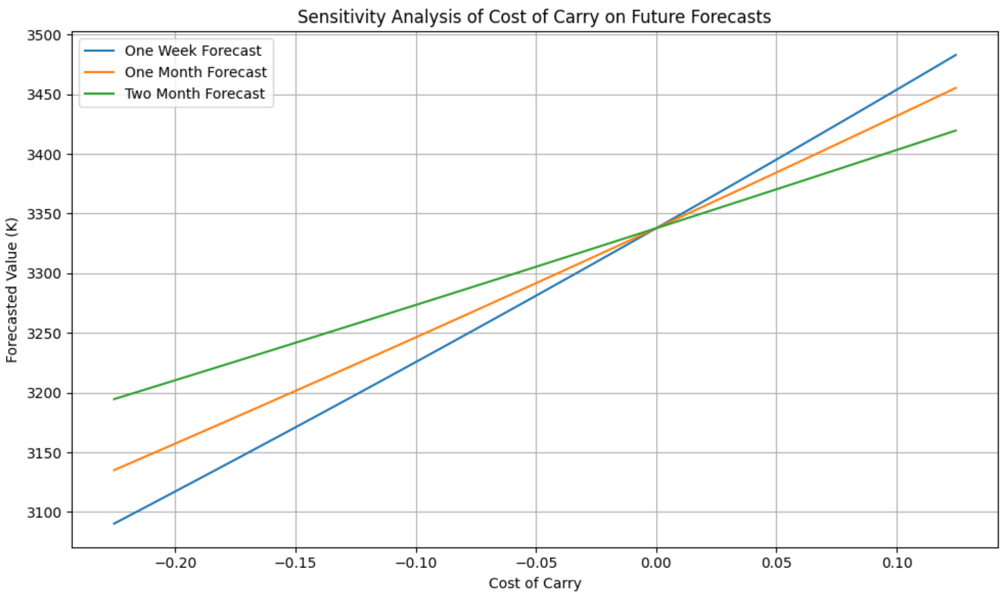

Figure 4. Sensitivity analysis of cost of carry with future forecasts

Put Options (Appendix 4)

The third option that Pershing Square evaluated was purchasing put options on the S&P 500 index. From Figure 5, it can be seen how the well the March put options are better than April put options. Furthermore, put options with March expirations generally offered higher payoffs compared to those expiring in April, particularly at lower strike prices (Figure 6). This is most likely due to the timing, as March captured significantly more of the initial drop in market value, when compared to April. However, the cost of purchasing these options was substantial, particularly for longer expiration dates, and Ackman had to consider whether the hedging benefits outweighed the high upfront premium costs.

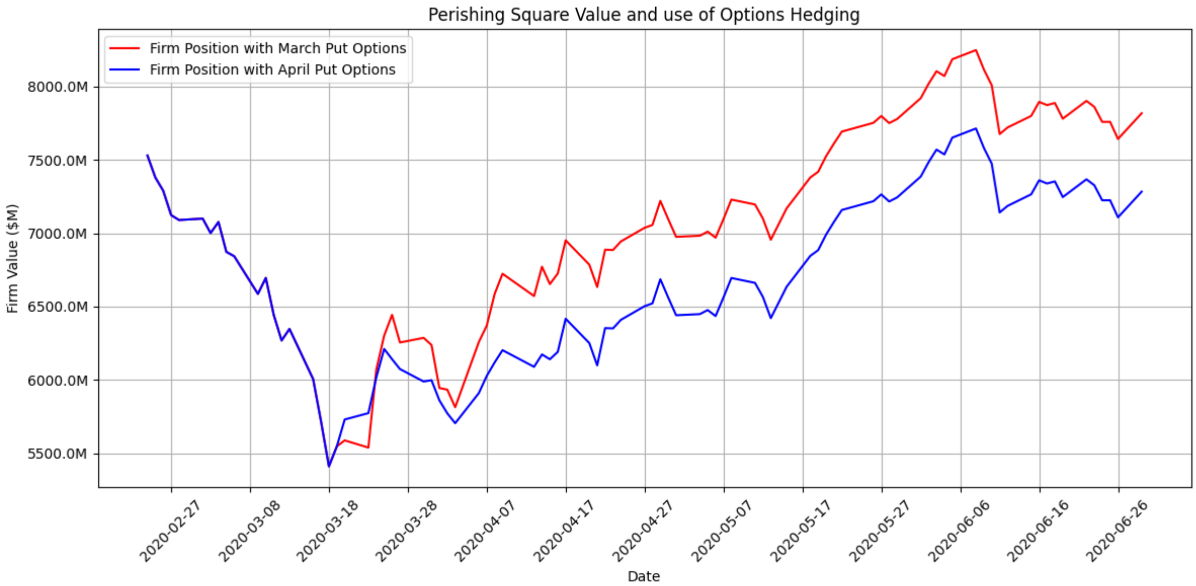

Figure 5. Firm Value When Hedging with March and April Put Options

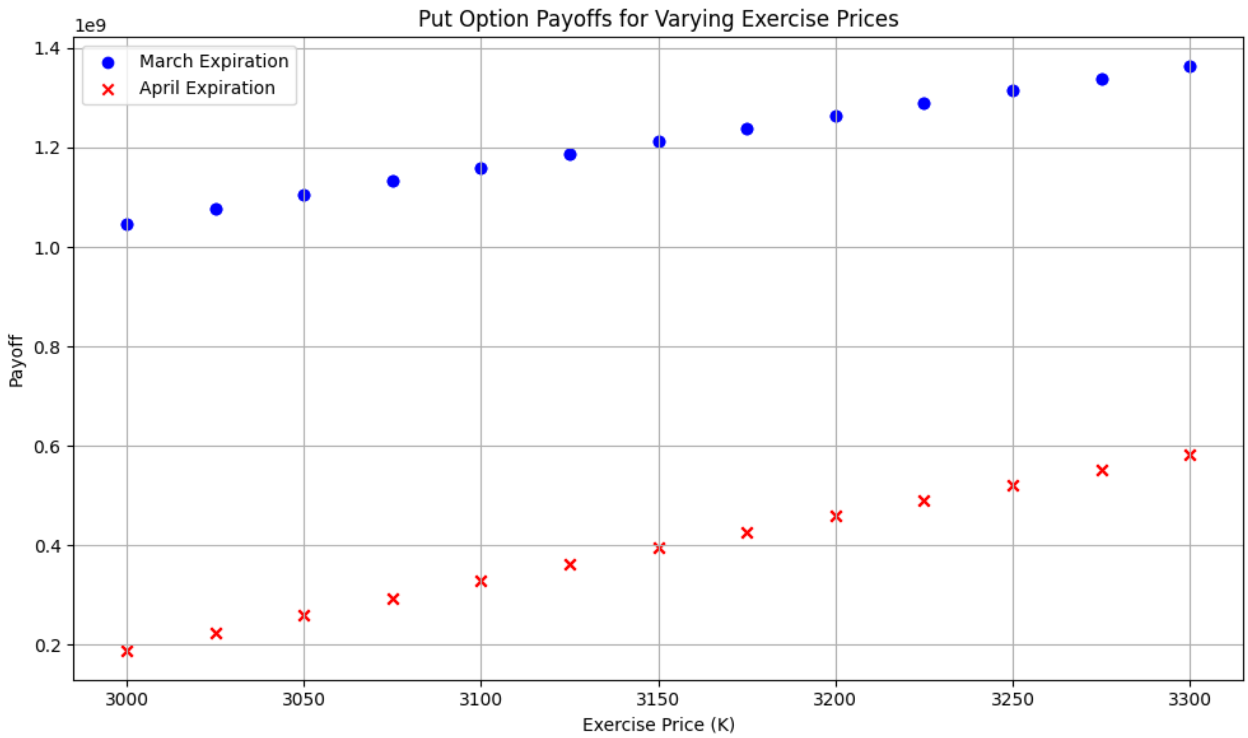

Figure 6. Put option payoffs for varying exercise prices

Credit Default Swaps (Appendix 5)

Credit Default Swaps (CDS) are contracts between two counterparties that insures a payout to the buyer in the event of a default. The mechanics of the CDS contracts, used for hedging, involves recurring premium payments from the buyer of protection to the seller. Additionally, an upfront payment would be paid to the seller of the contract. The CDS spreads function as a proxy for the market's perception of credit risk. As spreads widen, the value of the CDS contracts increases, offering substantial gains for the buyer.

	CDS	Payoffs	Spreads Before	Spreads After	CDS Spread	Quarterly Premiums	Upfront Payment $100 Notional value	Upfront Payment
0	CDX IG	$263,337,103.64	0.59%	1.30%	0.71%	$22,707,347.98	$2.55	$196,283,855.46
1	CDX HY	$1,235,088,105.78	3.46%	6.79%	3.33%	$133,165,125.47	$8.97	$690,457,326.80
2	ITRAXX Main	$248,501,210.47	0.60%	1.27%	0.67%	$23,092,218.29	NaN	NaN

Table 2. Payoffs When Hedging With CDS Indices

Ackman's hedge yielded considerable profits as credit spreads surged in response to the escalating pandemic crisis. Initially, spreads on both IG and ITRAXX indices widened moderately, with payoffs of $263 million and $248 million respectively. However, as the crisis deepened and panic spread through financial markets, CDX HY spreads surged by 3.33%. This significant widening resulted in payoffs of more than $1.23 billion for Pershing's CDS positions These numbers are evident in Table 2. The exponential increase in payoffs illustrates the effectiveness of this hedge as the portfolio's value was preserved amidst global market turbulence.

Analysis of feasibility and suitability of hedging options

During the COVID-19 pandemic, Pershing Square evaluated several hedging options to reduce the market risk of their portfolio. Not hedging was quickly deemed unsuitable, as the portfolio faced significant losses due to its exposure to vulnerable sectors, evident in Figure 1. The steep decline, between February and March, in Perishing's portfolio value highlights the infeasibility of this approach.

Partial liquidation mitigates some losses while preserving capital for potential reinvestment. Full liquidation, although feasible in the short term, would have eliminated market exposure altogether. The liquidation approaches would have allowed Pershing Square to avoid further losses and potentially reinvest at a lower market point. Though, selling such large options would significantly impact share prices, making these strategies less suitable as they don't align with Perishing's long-term strategy, and this was not incorporated into the models presented in Figure 2 or Appendix 2 below.

S&P 500 futures, as shown in Figure 3, provided only moderate protection. While futures contracts lessened the portfolio's exposure to market downturns, they were insufficient to prevent substantial losses, as the portfolio value still declined by approximately $2 billion. S&P 500 put options, in contrast, were a more effective hedge. Figure 6, depicting the payoff of put options demonstrates how this strategy provided downside protection while maintaining the possibility of capitalising on future market gains.

The use of credit default swaps (CDS) proved to be an effective hedging strategy, with the CDX HY yielding payouts of approximately $1.2 billion. While the options strategy allowed Pershing Square's portfolio to recover to pre-crisis levels in less than 180 days—outperforming the returns from the CDS hedging position as detailed in Appendix 5—there were important considerations that influenced the decision to prioritise CDS. The notional value of the portfolio was not a reliable proxy for hedging with CDS, which is what Ackman did not employ. These factors, including the high premiums associated with options, which significantly reduced potential profits, likely contributed to Pershing Square's decision to favor CDS as a more cost-effective hedging strategy.

Pershing Square's CDS trade

To hedge against the severe economic impact of COVID-19, Pershing Square took a decisive position in Credit Default Swaps (CDS). Ackman acknowledged the mounting risks that the pandemic posed to global markets and executed a hedging strategy designed to mitigate the fund's exposure to corporate defaults. By using CDS contracts on broad credit indices; CDX Investment Grade (IG), CDX High Yield (HY), and European iTraxx (ITRAXX), Pershing Square was effectively insuring its portfolio against a significant downturn in corporate creditworthiness.

The primary objective of the CDS trades was to protect the fund from losses due to defaults, downgrades, or widening credit spreads in the market. The notional value of the CDS contracts was linked to the portfolio value of Pershing Square as of February 21, 2020, which stood at approximately $7.7 billion. Ackman initiated the CDS contracts at this date, anticipating a significant rise in CDS spreads as the pandemic's economic impact grew.

Ackman and his team deliberated extensively on the timing of when to exit these positions. Initially, they kept the positions open as credit spreads continued to rise. The fund partially closed some of its CDS trades to lock in profits as spreads spiked, generating immediate cash inflows. By doing so, Pershing could ensure that it reaped the benefits of the widening spreads while maintaining some exposure to further market dislocations. However, as markets began to stabilise and spreads tightened, the team decided to close the remaining positions, timing their exit carefully to maximise gains while avoiding the risk of spreads reversing and eroding their profits.

Pershing's decision to implement CDS as a hedge was highly effective, shielding the fund from catastrophic losses and resulting in significant profits. The deliberations around keeping the positions open initially, then gradually reducing exposure, highlight Ackman's strategic foresight in navigating an unprecedented crisis. Through these trades, Pershing Square not only protected its portfolio but also positioned itself to benefit from the market's severe downturn, ultimately reinforcing its long-term performance and resilience.

Conclusion:

Pershing Square's response to the unprecedented market turmoil caused by the COVID-19 pandemic demonstrated a well-executed and strategic approach to risk management and hedging. Led by Bill Ackman, the fund was able to navigate one of the most volatile periods in financial history through a series of calculated decisions. Initially, Pershing's concentrated portfolio, with heavy exposure to sectors such as hospitality and retail, posed significant risks as the pandemic severely impacted these industries. Faced with the potential for substantial losses, Ackman and his team moved quickly to evaluate various hedging options, each with distinct risks, costs, and potential outcomes.

Among the options considered, Ackman's bold decision to employ Credit Default Swaps (CDS) proved to be the most effective in protecting the fund from market volatility. By purchasing CDS contracts on major investment-grade and high-yield indices, Pershing Square was able to hedge against the widening credit spreads that materialised as the global economic crisis unfolded. The strategy not only safeguarded the portfolio but also resulted in significant profits as spreads widened dramatically. Through a mix of partial and full liquidation of their CDS positions, the fund secured gains of $2.65 billion, effectively mitigating the downside risk from their equity holdings.

Ackman's decision to carefully manage the timing of both the initial trades and the eventual liquidation of the positions highlights Pershing Square's agility and deep market insight. The success of this hedging strategy underscores the importance of proactive risk management in uncertain times. Ultimately, Pershing Square's response to the crisis allowed the fund to preserve capital, generate substantial returns, and maintain its long-term investment outlook, emerging stronger from one of the most challenging periods in financial markets.

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Appendices:

For a better viewing experience, please visit the following website and click on the links at the bottom of the page: https://danielciccc.github.io/FINM3405/docs/FINM3405.html

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