# Fall 2022 QFS Portfolio Team Letters

## Fall Semester Performance

**QFS Long/Short Equity**: 16.16%
**S&P 500**: -3.26%

**QFS Global Macro**: 4.01%
**S&P 500**: -3.26%
**IQ Hedge Global Macro Beta Index**: 1.55%
**Eurekahedge Macro Hedge Fund Index**: 1.10%

**QFS Quant**: 1.72%
**S&P 500**: -3.26%

* 9/12/2022-12/07/2022, S&P 500 Total Return Index, IQ Hedge Global Macro Beta Index

## Introduction

The Fall 2022 semester was yet another eventful, interesting semester for markets and our portfolios. We began the fall semester ready to invest in themes and trade around ideas that were developed over the summer, understanding the rising interest rates environment as well as the Russia-Ukraine war. We left the semester excited to review how our strategies performed and how they could be improved upon over winter break. As we reflect upon this past semester and the few weeks afterwards during which we reviewed the semester's performance, a wise quote from George Soros comes to mind: "I don't have a particular style of investing, or, more exactly, I try to change my style to fit the conditions." During our review, we realized that our best trades stemmed from taking the time to first understand broader themes and structural forces in markets, and then adjusting our conviction and ideas properly. All three portfolio's market-beating returns speak to our success in staying patient and sticking to our own circles of competence.

For our long/short equity portfolio, we maintained low net exposure amid volatile equity markets from a high inflation and interest rates environment. For our global macro portfolio, timing our bets around the US dollar became central to our portfolio performance, through both its rally and decline. For our quantitative portfolio, strategies took advantage of patterns noticed in equity options and cryptocurrency markets. These are examples of how we understood broader market conditions and adjusted portfolio construction accordingly. Next semester, all portfolios will be excited to execute trades and investments developed over the winter and continue to improve our performance. While we responded well to a semester characterized by fears of a looming recession, we left room for improvement that we will be targeting in future semesters. We look forward to the upcoming semester and to detail our performance in future letters.

Best,
QFS Portfolio Team

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## About Us

Quantitative Finance Society (QFS) is a club at NYU's Stern School of Business dedicated to investment analysis, quantitative trading, and macroeconomic research. We host weekly meetings for the broader NYU community to learn a variety of financial market concepts. Additionally, each of our portfolios (Long/Short Equity, Global Macro, and Quantitative) meet weekly to discuss events in markets, collaborate on research, and draft actionable pitches across a variety of asset classes. All portfolio team members meet at large once a week to evaluate our pitches. We also have special events for stock and trading competitions and alumni networking.

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## Fall 2022 Leadership

**Head of Portfolios**
Michael Lu

**President**
Daniel Shahab-Diaz

**Portfolio Managers**

**Long/Short Equity**
Connor Liu, Rohan Rao

**Global Macro**
Sid Inta, Brian Xiao

**Quantitative**
Rayhan Ahmed, Arjan Kang

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# Fall 2022 Long/Short Equity Portfolio Letter

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## Portfolio Background

Our portfolio takes a concentrated, long-term approach to investing in undervalued equities globally. We conduct bottom-up analyses of companies of all industries and sizes, focusing on their earnings power, financial health, management quality, and paths to shareholder value creation. Concentrating our capital in our best ideas, long and short, we focus on preserving our capital and finding an edge by conducting extensive due diligence on mispriced securities. A challenging macro environment in Fall 2022 guided our investment and allocation choices.

**Fall Semester Performance**
**QFS Long/Short Equity**: 16.16%
**S&P 500**: -3.26%

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## Commentary

High inflation and rising interest rates greatly impacted equity markets during the Fall 2022 semester. Y/Y CPI came in at around 7% to 8% for each month of the semester – leading to aggressive rate hikes which caused a sharp decline in the market during the first half of the semester. Many companies also experienced headwinds relating to rising labor and commodity costs, all the while lapping record 2021 earnings and facing an increasingly cautious outlook from both consumers and businesses. To mitigate these uncertainties, we kept net exposure between 20% and 30% for the majority of the semester. In addition to our core long and short positions, we placed bets on numerous special situations throughout the semester to further diversify our trades. Reflecting on the semester with the benefit of hindsight, we were very satisfied with this approach to the portfolio given how turbulent markets were during Fall 2022.

Throughout Fall 2022, we closely monitored a few trends that helped us identify investment themes. On the retail side, we observed that high inflation contributed to a "trade-down" effect where consumers shifted their preferences towards lower-end and used products. We therefore took short positions in a few companies that did not benefit from used sales and were selling high volume, high ASP products during the second half of 2021. Moreover, as businesses started contemplating a potential 2023 recession, corporate budgets shrunk which made it harder for B2B service providers to acquire new business. Consequently, we were bearish on many software names that strongly relied on new customers to deliver strong bookings and billing numbers in the past. This stance heavily benefitted from the rising rate environment that punished higher growth companies more than their lower growth peers.

While we were pleased with the semester's performance, many of the mistakes made along the way were great learning moments for our portfolio. Positioning and differences to consensus numbers were examined for all our positions, however, we should have exercised more caution on crowded names. Money was lost on crowded trades (long BILL and short HZO), particularly ones where sell-side consensus wasn't accurately representing what the market truly thought. In hindsight we should have been nimbler to trim / exit when our investment thesis played out or if material, new information adversely impacted our investments. Many of our semiconductor shorts did not pan out as export controls on semiconductor-related products benefitted domestic manufacturers.

Ultimately, we were satisfied with how we navigated the challenging macro environment. Throughout the semester, we made a concerted effort to trade only our highest conviction ideas, all the while minimizing our exposure to the market's turbulence. Below, we summarize our thoughts and theses on three of our best performing trades of the semester.

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## Selected Investments

**Short ZoomInfo (NASDAQ: ZI)**

ZoomInfo provides go-to-market (GTM) software and data for sales and recruiting teams. Prior to the Q3 earnings report, the name held up well relative to the rest of the software universe as it generated positive cash flow and had a best-in-class product. We initiated a short position in ZI during the middle of October when shares were trading at ~$44 – we believed that consensus (at ~38% – 40% billings growth Y/Y for the quarter and 30%+ billings growth for 2023) was far too optimistic on growth prospects from Q3'22 to the end of 2023. Despite consensus acknowledging macro headwinds, many believed that low market penetration, a sticky and differentiated product, and positive margins would provide a floor for growth. We took the view that potential customers (especially large ones) who anticipated a weaker business environment in 2023 would hit the brakes on additional IT and S&M spend. The premium pricing that ZI charged would raise an eyebrow and at the very least lengthen sales cycles as customers would increasingly push for more favorable terms or lower pricing in cases where they viewed the purchase as essential. Moreover, given a high percentage of growth coming from new users (which we believed would drastically slow) and short sales cycles (some sources pointing to ~1 month), we believed '23 billings estimates had more downside than upside as they seemed largely anchored to 1H '22 actuals of 40% – 45% where net adds were strong. This ended up being confirmed when Q3 billings were 10% lower than consensus and the CFO's guided to high-teens 2023 revenue growth.

**Long Tempur Sealy International (NYSE: TPX)**

Tempur-Sealy International is a leading player in the mattress and bedding industry. We went long TPX when they traded at $24 with the thesis that they were uniquely positioned to capture market share against a fading Serta Simmons going into a mattress downcycle. We believed the market failed to price in ASP stability and TPX share gains, making the stock cheap at 8.3x EBIT. With Serta Simmons suffering from a distribution breakdown with Big Lots, an inability to offer an attractive price/quality mix due to high debt levels and liquidity issues, and product stagnation, market share fell from ~40% in 2019 to ~25% in 2021. This gave TPX the ability to develop superior products on the premium end. TPX is using this position and premium product to force retailers to buy other TPX products (Sealy and Stearns & Foster) in order to wipe out competition in stores because of limited capacity. Consequently, TPX penetration in many retailers such as Mattress Firm has reached 100% in some locations. Moreover, with demand and prices skyrocketing during the pandemic, some have speculated that ASPs might moderate. However, retailers have been explicit in stating that they will not pressure OEMs to reduce prices despite reducing costs and plan to sustain current pricing with the logic that long replacement cycles for mattresses make customers less sensitive to price hikes.

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**Short CWH (NASDAQ: ROKU)**

Camping World Holdings is the largest RV retailer in the United States. We were short at the beginning of the semester when CWH was ~$32 per share. Our investment thesis was that both retail sales and margins would face significant pressure in 2023. As background, wholesale shipments were ~17% above trend as retailers like CWH significantly increased orders during 2021 and 2020 to meet record demand. However, retail registrations were declining as people had to return to offices, gas prices rose, RV costs went up, and buyers already had purchased an RV in the past 2 years. Because of the COVID-related drivers of the boom in 2021 / 2020 RV sales, we reached the conclusion that the cycle would reverse – creating headwinds on retail units sold. Moreover, because of higher inflation and a weakening consumer, we were skeptical about the RV industry's ability to sustain a ~30%, pandemic-induced uplift in ASPs. This combination of factors meant that CWH was stuck with a large amount of unsold inventory, significant demand headwinds that would make clearing inventory difficult, and reduced revenue per unit sold. Despite this, consensus was pricing in flat revenue growth and gross margins in the NTM. As promotional activity increased among dealerships to sell unsold inventory and RV shipments on both the wholesale and retail side disappointed, we realized profits on this trade.

## Closing Thoughts

Overall, we felt that we had a successful semester both in terms of our outperformance of the S&P 500 and in terms of our individual journeys as investors. Pitches were high quality and members were pitching frequently enough for us to have enough ideas for both our long and short books – something that we have struggled to do in the past. Our commitment to producing thorough research to craft a variant view is something that helped us navigate this challenging macro environment and is something that we will strive to continue in future semesters.

# Fall 2022 Global Macro Portfolio Letter

## Portfolio Background

Our portfolio searches for opportunity across markets, identifying new macroeconomic trends as they form. The fall semester was characterized by the backdrop of persistent inflation and changing expectations of central bank policy. The portfolio was able to position well for initial dollar strength during the beginning of the semester alongside economic fiascos within Britain and China, but got caught when central banks started to intervene to defend against currency depreciation. In addition to discussing our portfolio strategy in more depth, the letter also analyzes various selected trades. The letter concludes by discussing some key performance factors and outlining ideas for improvement for the coming semester.

**Fall Semester Performance**
**QFS Global Macro:** +4.01%
**Eurekahedge Macro Hedge Fund Index**: +1.10%

## Commentary

The fall semester began with a more cautious approach to the portfolio, as rising interest rates continued to hamper EM performance. As a result, the portfolio was much more selective on traditional ideation in emerging markets FX, credit, and equities. Despite a fall semester that began with a focus on hawkish rhetoric and ended with global recession risks, the portfolio navigated its way to generally outperform macro hedge funds.

Below, we will summarize our thoughts and theses on three trades that were most representative of our ideation during the semester.

## Selected Trades

**Trade:** Pakistan 2022 Bonds
**Return:** +11.80% **PnL:** +$88,500.53 (Book Size: $10M)

**Thesis:** Throughout the summer, Pakistan experienced devastating floods which destroyed the economy and left the country in a perilous fiscal condition. However, due to the country's resumption of the IMF EFF program in August alongside Arab and Chinese loans, we calculated that Pakistan would have sufficient reserves to pay off the 2022 bonds and believed that the Sharif administration had the willingness to pay off the debt.

**Commentary:** While Pakistan's 2022 bonds were paid off as expected, throughout the trade there were significant worries of restructuring, especially after miscommunications from the prime minister confused investors on whether restructuring was targeted towards bonds or bilateral creditors. In addition, the persistent bid/ask spread of ~3 cents on the dollar was a significant factor at play; the lack of liquidity and the rapidly changing environment required careful analysis of the position. Careful management of this position was crucial to insure that we properly allocated risk and didn't allow our left-tail risk to become too large.

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**Trade:** MXN Flattener (Receive TIIE 5Y, Pay TIIE 2Y)
**Return:** +42.95%  **PnL:** +$10,736

**Thesis:** While Banxico still had more room to hike in the short run, there were considerable signs of reversion in CPI pressures. We viewed 5Y rates to be mispriced at the entry of 9.15% – just an 83 bps differential between 2Y and 5Y rates. This made little sense from the perspective of Mexico's economic cycle and central bank agenda. Hence, we put on a flattener believing that there would be faster than expected policy normalization than priced within the markets.

**Commentary:** The portfolio's main takeaway from the trade concerned sizing and execution. Uncertainty was one of the major reasons that this trade was expressed as a flattener rather than an outright 5Y receiver: the dollar was still peaking and mixed rhetoric existed over short term interest rates which could have significantly hurt semester PnL. However, capturing nearly a 43% move should have translated into a much larger portion of overall returns than it actually did. In future semesters, we will aim to develop a more cohesive framework to more accurately target DV01 and risks associated with the trade.

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**Trade:** Long USD/EGP 3 Month NDF
**Return:** +11.83% **PnL:** +$59,128

**Thesis:** One of the primary requirements for IMF funding was the depreciation of the Egyptian Pound, as capital constraints enacted by the previous regime led to an overvalued currency that derailed Egypt's economy. We believed that the market was failing to price in adequate EGP depreciation over a 3 month basis based on IMF rhetoric. This driver in combination with a current account deficit and USD strength this quarter created an attractive opportunity for our portfolio to enter into a 3 Month USD/EGP NDF.

**Commentary:** While USD/EGP seemed like a very logical position to have on book given Egypt's desperate situation, the portfolio's main takeaway was assigning a time-based probability framework for EGP depreciation and adjusting for the need to pay roll. By entering and exiting the position when we thought EGP depreciation would be the most and least likely, we were able to improve the positive expectancy of the trade.

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## Closing Thoughts

The majority of our Fall 2022 book took advantage of opportunities arising from the overarching theme of a strong U.S dollar, especially in the first half of the semester. It became clear to us that broad dollar strength would inform the majority of moves in markets, leading us to carefully position ourselves in FX trades such as USD/JPY, USD/GBP, and USD/CNH. These positions provided great returns for us during the first few months of trading, but we failed to make a large profit on these positions in the end for a few key reasons.

First was a failure to take profits. While we enjoyed riding the dollar rally, the rug was pulled from underneath us in the second half of the semester. This turned some of our most successful positions into some of our biggest losers very quickly, a scenario that could have been prevented if we had been more disciplined with following levels where we had planned to reduce our exposure. Another major lesson from the reversal in dollar strength this semester was that we needed to be more cognizant of how we hedged our portfolio in the scenario of tail risk events. Thankfully, we had a largely sized short USD/THB position that was able to minimize our losses this semester, but moving forward it is imperative that we think through potential downside scenarios and how our portfolio would perform in such cases. Finally, a last important consideration is the sizing of our FX positions, as we found too often this semester that successful trades were not contributing to a significant portion of our overall returns.

Moving beyond some oversights in our portfolio construction in FX, there are some positives from this semester that we would like to carry forward into future semesters. Chiefmost amongst these positives is the success of our credit book, particularly in EM strategies. We believe our portfolio did an excellent job in identifying opportunistic trades that were idiosyncratic to the rest of the markets. For example, positions such as our Pakistan 2022s, PeMex 2027s, and El Salvador 2023s all performed exceptionally well as a result of careful diligence and the general outperformance of high yield credit this quarter.

In the Spring, we will continue to diligently analyze opportunities in both emerging and developed markets. Our macro approach will remain informed by the broader environment that will have to balance policy normalization in developed markets with recession risks.

Best,

Macro Portfolio Team

# Fall 2022 Quantitative Portfolio Letter

## Portfolio Background/Commentary

Over the past few months, the Quant portfolio executed well-researched strategies that are both systematic and discretionary in nature. While we were unable to attain significant returns, our market-neutral strategies prevented us from experiencing broader losses. Further, volume constraints in options markets prevented us from capitalizing on notable opportunities. On the other hand, we did not experience any unforeseen events such as Barclays' VXX troubles last semester and market impact should always be considered when implementing trades. Ultimately, we were able to capture returns in equity options through an iron condor strategy around earnings. Further, to capitalize on a shift from the ZIRP policy and an economy that was facing large uncertainty as to its direction in the coming years, we backtested a strategy to identify when such environments occur and thus construct a portfolio of equities exhibiting high convexity that would stand to gain in such markets. Lastly, we tested the crypto market with a strategy to systematically short a basket of cryptocurrencies followed by a discretionary pairs trade on decentralized exchanges (SLND & SRM) built on Solana after FTX's collapse.

**Fall Semester Performance**
**QFS Quantitative**: 0.98%
**S&P 500**: -4.02%

## Selected Strategies

**Trading Strategy 1: Long Iron Butterflies on S&P Equities into Earnings**

Using a large set of historical options data, we were able to discover a peculiar pattern in the behavior of the volatility surfaces of S&P equities around the time of earnings calls. We found that when comparing the volatility surface at market close right before an earnings call to the same volatility surface a week later, IV on OTM options (90% moneyness put, 110% moneyness call) tended to increase while IV on ATM options tended to decrease, and that this pattern was statistically significant. This led to the idea of trading Iron Butterflies (long OTM call and put, short ATM call and put) which would be able to capitalize on this pattern in the long run. After identifying a quantitative measure for the quality of a given trade's potential fill price to prevent unfavorable entries (which otherwise occurred due to transaction costs in the options market), this strategy became very profitable.

Even though we were willing to fully cross the bid-ask spread at both entry and exit on each leg of the trade, many of the options that the strategy identified as optimal had very low volume, open interest, and bid/ask order sizes, and we were not able to consistently trade in the size that we would have wanted to. Consequently, although the strategy was very successful relative to the amount allocated to it, it was not scalable and was not able to significantly contribute to the overall portfolio PnL.

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**Trading Strategy 2: Short Cryptocurrencies Overnight**

This strategy revolved around systematically shorting a basket of cryptocurrencies (BTC, XTR, ETH, LTC) for a brief period past midnight until pre-market open time for equities. The backtest showed an unusual and relatively consistent decline during that time, especially evident in BTC. When entering the trade, we fundamentally justified this relationship with a combination of bad news coming out overnight and institutional hedging flows in crypto markets. The strategy returned ~1.15% over the semester, which makes it unattractive in retrospect (especially when factoring in risk). We think that the biggest mistakes included getting exposure to coins where the backtest did not show a sufficiently strong trend and not spending enough time considering the fundamentals behind the trend, which made it hard to determine if it will persist.

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**Trading Strategy 3: Long SLND, Short SRM Post-FTX Collapse**

Shortly after FTX started unraveling, we entered a pairs trade via a short position in SRM – a token of Serum – and a long position in SLND – a token of Solend, with both Serum/Solend being decentralized exchanges built on Solana. The justifications for shorting SRM included FTX owning Serum, persistently declining exchange trading volume, and pn-chain analysis showing that FTX propped up the Serum token. Our thought process behind making this a pair trade and not just an SRM short was that people still want to trade on a Solana DEX which meant that if money left Serum, other exchanges would gain. Solend had no ties to FTX, making it a relatively good candidate for that shift. The pair trade returned 21.68% as Serum went defunct. In retrospect, we could have had more diligence on the long leg of the pair trade even though Solend did survive the FTX fiasco.

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## Closing Thoughts

Although our portfolio was unable to perform to the high standards we expect, we believe that we gained quite a bit of insight from cycling through ideas despite many of them not making the final cut. We studied the feasibility of our systematic pitches much more closely and focused on accurately tracking their performance if they were executed in the market. While limiting portfolio exposure to a single asset class or strategy such as options or volatility forced us to downsize positions and ultimately dampened our final returns, we felt it was a much more realistic way of managing a book. Overall, we were content with the quality of research and hope to continue the robust processes going into the Spring semester.