The Impact of Portfolio Financing on Alpha Generation by Hedge Funds

An S3 Asset Management Commentary

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Building a successful hedge fund requires more than just the traditional three Ps of *Pedigree, Performance and Philosophy*. As hedge funds' popularity increases, it is increasingly clear that *Process* needs to be considered the 4th P in alpha generation. Clearly, balance sheet management, also known as securities or portfolio financing, is a key element of "process" as it adds to alpha (the hedge fund manager's excess rate of return as compared to a benchmark). Typically, hedge funds surrender their balance sheet to their prime broker and do not fully understand the financing alpha that they often leave on the table. The prime brokerage business is an oligopoly and the top three providers virtually control the pricing of securities financing. Hedge funds and their investors therefore need to pay close heed to the value provided by their prime broker as it has a direct impact on alpha and the on-going health of a fund.

Abstract

As investors seek absolute returns, hedge funds have grown exponentially over the past decade. In the quest for better performance, substantial premium is being placed on alpha generation skills. Now, more than ever before, there is a great degree of interest in deconstructing and better understanding the drivers of hedge fund alpha. Investors and hedge fund managers have focused on the relevance of asset allocation, stock selection, portfolio construction and trading costs on alpha. We believe that optimal portfolio financing is equally relevant and in certain strategies has a primary impact on alpha. This paper outlines the relevance of portfolio financing to a hedge fund's investment process and considers associated issues.

Introduction

Borrowing securities to enable short selling and using leverage to enhance returns are activities that are integral to most hedge funds. These activities can be broadly termed as portfolio financing. This paper will focus on portfolio financing as it pertains to stocks as we believe that the equities stock lending market is far less transparent than most fixed income equivalents (e.g. repos) and has greater arbitrage opportunities.

We estimate the equity securities lending market to be about $1 trillion. Given such a large value, it is surprising that there is very little if not any "bid" side to the market. While a few exchanges have been created in the past five years, there is still significant control of supply by custodial banks and prime brokers. Hedge funds are one of the most important drivers of demand for borrowing stock. Despite the importance of stock borrowing, the cost of selling short is often not calibrated by hedge funds. Due to this, more often than not, hedge funds pay a large premium to manage their short book.

Finance theory has evolved to focus on implications of constrained short selling and has begun looking at issues faced by market participants to borrow and short arbitrarily. Shleifer and Vishny (1997) and Hong and Stein (2001) are examples of such literature. While there is a general awareness of the transaction cost impact of portfolio financing among hedge funds, only a small percentage of managers focus on the impact of this activity on their alpha.

We use this paper to consider the impact of portfolio financing on a hedge fund.

Overview of Equity Loans

Ecosystem/Players

There are several players who facilitate, participate, control and benefit from the equity securities lending and portfolio financing market. Custodians, Asset Managers, Securities Lending Hubs/Exchanges, Prime Brokers and Hedge Funds are part of this ecosystem. Hedge Funds are typically on the demand side of the equation while inventory or supply management is driven by Custodians and Prime Brokers. All market participants play an important role in fostering this important capital markets activity. Prime Brokers are the largest supply source and counterparty of Hedge Funds for stock borrows.

Some Mechanics

An equity loan is a temporary swap of ownership except for voting rights. The equity lender transfers legal ownership of a block of shares to the borrower, who simultaneously transfers acceptable collateral. "General Collateral" (GC) refers to an equity that is not scarce. An equity security that is hard to borrow is termed "Special" (hot). Specialness is expressed in the applicable rebate rate. As per Geczy, Musto and Reed (2002), GC rebate rates to the street range from Fed Funds minus 8bps to 15 bps. These numbers typically reflect no mark up from intermediaries. Marked-up GC is usually in the Fed Funds minus 35bps range. Specials trade at far lower ranges. While the percentage of Specials tends to be far smaller than GC, intense demand pressure by hedge funds makes the spreads substantial.

Typically, there are several players involved in the chain of the securities lending market. Beneficial Owners lend securities to Custodians who in turn lend to Prime Brokers and they in turn lend to Hedge Funds. For a variety of reasons including appetite for credit risk, scale, operating margin expectations and charter restrictions, Beneficial Owners have not directly lent to Hedge Funds. This in turn has created the opportunity for intermediaries to price securities with significant spreads, especially in the case of hot stocks. As Hedge Funds do not typically have alternative inventory sources, the Prime Broker is able to define the "ask" side of the market.

Industry studies show that short equity exposure is approximately 45% of hedge fund capital. Usually, the following strategies tend to have large short equity exposure: long/short, statistical arbitrage, merger arbitrage and convertible arbitrage. As per the Global Custodian survey in 2003, on average, hedge funds use 2.2 prime brokers. In our experience, only a small set of big funds tend to have more than 3 prime brokers that they use on a regular basis. More often than not, a large number of even $1B AUM funds primarily utilize only one prime broker even if they have accounts in two.

While platforms such as Equilend have come into existence, they typically include custodians and brokers and do not include hedge funds as direct participants.

Aside from stock loan, margin finance is the other key expense for a hedge fund from a portfolio financing perspective. Typically, fixed income hedge funds have higher leverage compared to other strategies. For equity oriented funds, convertibles are often 150% levered while long/short is often in the 60% to 70% range.

Prime Brokers earn net income by lending cash. The lending rate is usually based on the prime broker's assessment of the hedge fund's credit. This assessment is as much an art as it is a science. Many prime brokers make a substantial amount of revenue from hedge funds as a result of this activity (Deutsche Bank has estimated that margin lending to hedge funds could represent 10% of investment banks' net interest income). This would imply that there is not much price compression in this activity and that hedge funds have not typically looked at this work with the same expense control viewpoint as they have for trading costs.

Hedge Fund Cost of Capital

Selling short can be expensive (Charles Jones and Owen Lamont, 2002) due to various constraints. These expenses are financed by a hedge fund via utilization of its balance sheet to facilitate the borrow. In our experience very few hedge funds fully understand or measure the cost of capital associated with this activity. It is interesting to note that hedge fund managers are very sensitive about how their portfolio companies' management team manages the cost of capital and yet they do not usually look at their own enterprise as an exercise in balance sheet management. This behavior is likely to change as increasingly, investors will seek out hedge funds that have the lowest cost of capital or lowest expense ratio pertaining to financing.

Securities lending activity remains robust even through bear markets, as shorting stocks is an integral part of a bulk of hedge fund strategies (As per CSFB/Tremont, over 40% of hedge funds are long/short equity). This means that a hedge fund needs to even more closely monitor and manage its cost of capital in a bear market as there is pressure on value of the offsetting long position.

Hedge Fund Strategies and Portfolio Financing

A variety of factors are considered by hedge funds in determining portfolio construction. Depending on the strategy of the fund, catalysts could include: flawed business models, competitive landscape, spin-offs, recapitalization, liquidation, litigation complexity, proxy, regulatory change, holding company trading, capital structure, pairs trading and balance sheet exposure. Regardless of catalysts considered in constructing a hedge fund's portfolio, most strategies require shorting stocks and hedging to achieve their objectives.

The return on a portfolio can be expressed as $R_P = a_P + ß_P R_M + e_P$ where e_P is the epsilon or non-systematic risk associated with a portfolio, $ß_P R_M$ is the market related return of a portfolio and a_P is the alpha generated. The determinants of a_P can be broadly categorized as (1) Security Selection and Portfolio Construction and (2) Implementation costs. Implementation costs for a hedge fund having both long and short exposures can in turn be

categorized under (1) trading costs and (2) portfolio financing costs. There has been a fair amount of focus on the impact of trading costs on alpha (e.g.: Ian Domowitz, Jack Glenn and Ananth Madhavan 2001, McSherry 2001, Willoughby 1998, Perold and Sirri 1993), however, very little has been written on the impact of portfolio financing and stock borrowing costs on alpha.

It is intuitively reasonable to see that even a potentially high return investment decision by a hedge fund manger could be derailed due to "implementation shortfall" (Andre Perold, 1988). This is as true from a portfolio financing cost perspective as it is from a trading cost perspective.

The Iceberg effect

One of the issues that hedge funds face with portfolio financing cost is that there is an "iceberg effect" and more often than not, the fund manager sees only the items above the waterline. The three primary cost components above the line are (1) Short Credit Rate (2) Debit Rate and (3) Free Credit Rate. The short credit rate is the rebate on the stock, the debit rate is the cost of carry or financing, and the free credit rate is the return on cash. The perceived opportunity by a hedge fund is to negotiate these figures with their counterparty.

There are a series of activities under the water-line that are market impact and opportunity cost related. These costs reflect the actual opportunity for a hedge fund to manage portfolio financing costs. Aspects covered in this category include tax treaty management, asset/liability matching, structured loan flow trading, collateral management, account type arbitrage and foreign exchange.

Balance Sheet Management

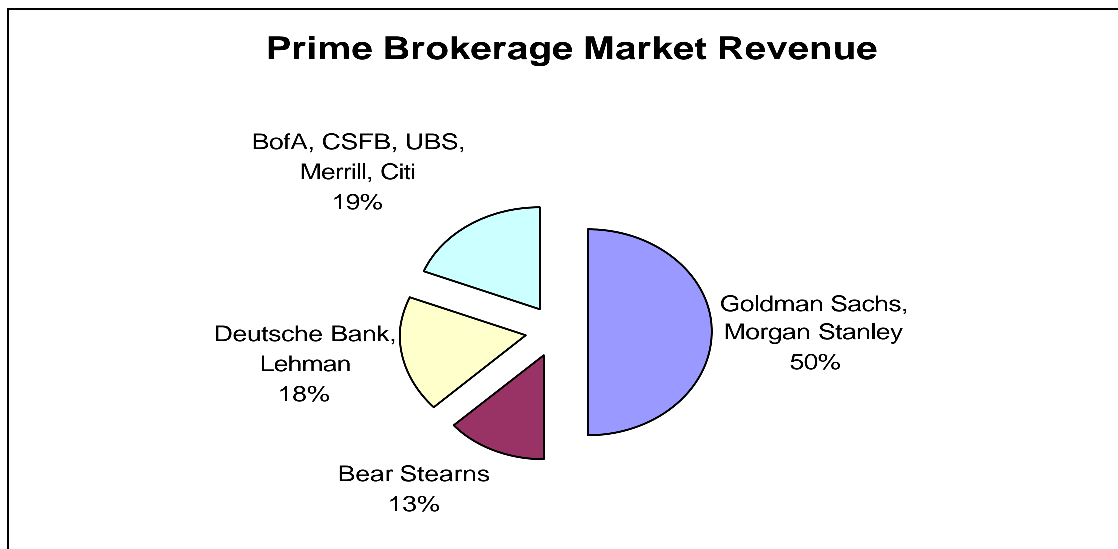
Most hedge funds do not realize that they are paying for overnight funds borrowed with a premium as if it were six to nine month money. The average debit rate is Fed Funds plus 50 bps. The minimum haircut for equity by a prime broker is 25% and sometimes it is as high as 80% for Reg T. This makes the cost of funds approximately 30 bps.

Overnight borrow is the most prevalent financing offered by prime brokers to hedge funds. At times, some savvy hedge funds are able to negotiate up to 90 days lock-up from the prime brokers. Hedge funds that have a directional view on rates and want to have a set financing cost for the medium term do not have an effective and liquid instrument as a solution.

Effective management of shorts involves analyzing activities including: monitoring short rebate, managing percentage of hard to borrow securities, average weighted rebate of the portfolio, average percentage of net short interest, UPC 71 shorts in the portfolio, stock borrow liquidity and tax exposures. Many hedge funds that we have analyzed do not have a rigorous process in managing their short position and their financing as they believe that they receive competitive pricing and that there is not much variation between one supplier and another.

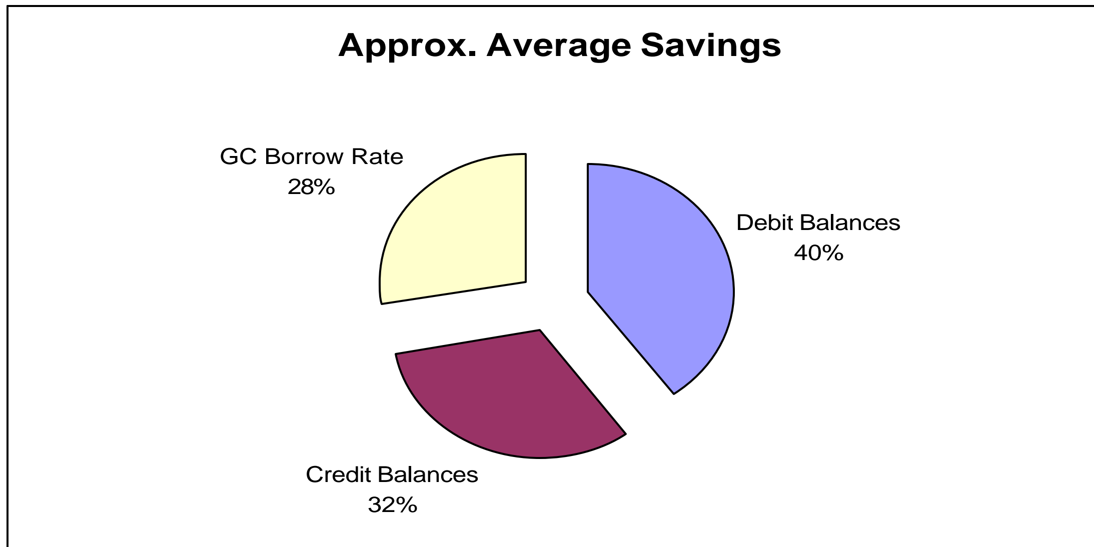
There is a misperception in certain market place sectors that portfolio financing to hedge funds is a "commodity business". That is, there is very little to distinguish between competing prime brokers, there is significant competition, tightening spreads and effective pricing. This is generally not reflected in the reality of P&L associated with the Prime Brokerage/Equity Finance business. It is our estimate that the five largest Prime Brokers on average have net margins of 35% and Return on Capital in excess of 100%. Another fact to challenge the perception of portfolio financing as a commodity business is the number of financial institutions that are eager to spend vast amounts of capital to grow or buy into prime brokerage/ equity finance. Despite the fact that the last few years have been one of the most bearish markets in recent history, many firms have added to their prime brokerage staff.

It is interesting to note that while a typical hedge fund may deal with over 50 trading counterparties, it usually has less than two prime brokers. The market dynamic has created a version of an oligopoly where supply and therefore higher spreads are concentrated with a handful of prime brokers. While the prime broker community plays a vital role in the success of hedge funds (in not only providing portfolio financing but also custody, clearing and reporting), the question a hedge fund may need to ask is – how much is too much premium?



Source: Deutsche Bank: "Of Prime Importance" March 1, 2004

Some hedge funds on the vanguard of effective balance sheet management have directly tapped debt capital markets and created variations of asset backed securities to address their financing needs. A majority of hedge funds, however, use one or possibly two prime brokers for all their portfolio financing needs. The combination of inadequate transparency in parts of securities lending market, lack of effective alternatives for funds other than dealing directly with prime brokers and lack of a deep understanding of their own cost of capital by portfolio managers often results in sub-optimal balance sheet management for funds.



Source: S3 analysis of hedge funds and approximate percentage savings from current schedules

At S3 we have analyzed a large number of hedge funds with the following strategies: equity long/short, convertible and merger arbitrage. These figures include funds with over $1B AUM. We estimate that significant percentage savings can be derived just from the top line of rates.

<u>Changes on the horizon</u>

There appear to be several changes in the horizon for the portfolio financing market including: institutional pressure, increased regulatory oversight, potential alternative venues and new service providers.

Institutional pressure: While the allocations from institutions to hedge funds have significantly grown, it is fair to say that thus far the high net worth market has been the primary driver of AUM. With the continued search for alpha, it is likely that more institutions are going to put money into hedge funds. As this trend increases, the focus on process is going to become as important as performance and pedigree for a hedge fund to make itself appeal to the institutional client. As per Casey, Quirk and Acito (Operational Due Diligence for Hedge Funds – 2004), the next generation of due diligence will focus on the ability of operations to generate value.

Regulatory oversight: More than ever before, regulators are scrutinizing activities of the hedge fund industry. There is an increased awareness about risks associated with valuation, compliance, legal, cash collateral etc. As part of the regulatory review, the role and pricing behavior of prime brokers is also being evaluated. While there may not be a significant regulatory change, it is likely that practices and policies will be monitored with far greater emphasis.

Regulators have looked at or are analyzing various facets of the hedge fund industry including soft dollars, research, distribution fees, capital introduction and registration. Prime

brokerage and portfolio financing services are one of the last bastions of activity in this industry that have not been scrutinized. This is likely to change in the near future as funds need to show that they are receiving "best execution" for portfolio financing services akin to trading execution. It is also reasonable to expect that funds will have a fiduciary responsibility to monitor and control portfolio financing costs.

Alternative venues: Several venues are developing in the stock lending world. Some have been sponsored by prime brokers and custodians. Others aim to serve as independent clearing agents. In addition, direct linkage between hedge funds and beneficial owners is likely to become more prevalent.

Vertical integration: It is likely that many $1B AUM plus hedge funds will start having the wherewithal to set up their own broker-dealer entities to transact directly with securities lenders.

Service providers: Some large and sophisticated hedge funds have 10-15 people focused on portfolio financing and managing the interface to prime brokers and other sources of financing/ stock loan. There is likely to be a set of new service providers who perform this type of function on an outsourced basis for hedge funds that either do not have the capability or for funds who do not wish to build this footprint and want to focus on their core competency.

Conclusion

Some of the most successful hedge funds dedicate significant resources to manage portfolio financing. They realize that securities lending is not a commodity business. The common belief that commoditization has occurred is only relevant to the vast majority of general collateral. However, as many investment banks are vastly increasing their capital spending to build out their prime brokerage business, it is clear that there is more than a reasonable amount of profit to be made in this activity.

Effective management of portfolio financing could make a big difference. It is our belief that anywhere from 5% to 20% of the P&L of Hedge Fund (typically Long/Short, Convertible and Merger Arb strategies) is affected by stock lending. The cautionary note for the hedge fund consumer is to know the premium they are paying to their prime broker. It is possible that a hedge fund may think it worthwhile to pay that premium, but it is important that the decision is a conscious and well informed one.

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