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FINANCING RISKS REVISITED

A fresh look at best practices for securities finance and delta-one derivatives

EXECUTIVE SUMMARY

Trading losses suffered by some dealers triggered a review of risk policies and business activities across the industry; however, the damage associated with the failure of Archegos Capital Management was only one example of securities financing and delta-one trading gone awry. Financing risks are now also playing out in crypto markets as leverage unwinds in painful fashion. Meanwhile, in traditional capital markets, more losses may be lurking in financings that are not adequately secured.

Financing risks pervade many products and transactions, paving the way for future losses if they are not managed with rigor and consistency. Among these risks, and despite prudential measures prompted by the Financial Crisis of 2007-08, unsecured credit exposure in financing transactions now dominates with devastating consequences. Risk management often falls short when revenue targets or client relationships are at stake, and losses tend to increase while responses are debated.

This article highlights more than three dozen best practices for banks and broker-dealers engaged in securities finance and delta-one derivatives, covering business, client, and risk management, transactions, culture, organization, skills, and capabilities. Collectively, they provide a roadmap to a robust business model and a toolkit to diagnose existing practices. It is important to review these fundamental principles in order to reset risk parameters, tighten operations, and avoid losses that can exceed the profitability of the business itself.

Regulators may also find this article to be a useful resource during examinations, and asset managers should take heed to understand the challenges facing their counterparties and to ensure the stability of their own financing sources.

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I. SECURITIES FINANCE DEFINED

Securities finance is any lending business (physical or derivative/synthetic) that is collateralized, secured, margined, or hedged with liquid securities. This definition applies as well to the lending of cash for securities, securities for cash, or securities exchanged for other securities.

The collateral or hedge associated with securities finance serves to limit reliance on counterparty credit for the recovery of the implicit or explicit loan. Associated market risk remains with the borrower unless the borrower defaults, at which time the lender must trade out of its collateral or hedge to recover the loan. A lender with both the contractual right and the expertise to liquidate collateral can then safely finance any viable counterparty that offers collateral of equal or greater value.

Securities finance is practiced either as principal, where the dealer takes the other side of the transaction with the client; or as agent, where the bank sources a loan from the market on behalf of the client, providing services rather than lending from its own balance sheet. Banks operating trading and/or custody businesses take note: While principal risks are greater, agency facilitation can still expose the bank to considerable risk.

II. FINANCING RISK DEFINED

For any lending business, the primary risk is the failure to recover the loan in cash, and thereby realize a loss or encumber the balance sheet with illiquid assets. Every lender expects the borrower to repay. Should the borrower default, secured transactions provide for the recovery of the loan in cash from the sale of securities, collateral, or assets being financed. Illiquid collateral may have some value; however, inability to convert that value into cash leaves the transaction unresolved, especially if the client declares bankruptcy.

The main purpose of secured financing transactions is for borrowers to raise cash without liquidating assets. Other reasons for seeking secured financing include lower borrowing rates and more favorable operational, tax, accounting, legal, or regulatory outcomes. Aiding a client with these issues may constitute good financial advice and demonstrate engineering skill, but can subject the bank to financial liability and reputational risk. Offering leverage via derivative products can also introduce basis risk from partial or imperfect hedges. One or more of these risks have been the cause of many recent losses, including delta-one trading in Europe,[1] single-security financing in South Africa,[2] "cum-ex" trades in Germany,[3] and LDI funds in the UK.[4]

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[1] Douwe Miedema and Tommy Wilkes, “UBS $2 billion Delta One loss puzzles experts,” Reuters, September 16, 2011, https://www.reuters.com/article/uk-delta-one-idUKLNE78F04B20110916.

[2] Arash Massoudi, Dan McCrum, Chris Flood and Joseph Cotterill, “Steinhoff woes hit big banks, investment funds and ECB,” Financial Times, December 7, 2017, https://www.ft.com/content/b32fca84-db63-11e7-a039-c64b1c09b482.

[3] Olaf Storbeck, “Deutsche Bank broke its own rules in enabling tax fraud, internal probe finds,” Financial Times, August 1, 2022, https://www.ft.com/content/8bc32764-d833-43fd-9439-19d60c085d60.

[4] Alexandra Scaggs and Louis Ashworth, “LDI: the better mousetrap that almost broke the UK,” Financial Times, September 29, 2022, https://www.ft.com/content/f4a728a5-0179-48bd-b292-f48e30f8603c.

Securities finance is a scale game, provided trades are adequately collateralized: the bigger the business footprint, the greater the access to cash and the wider the profit margins. Larger firms enjoy better price discovery, can internalize longs and shorts, and continually upgrade the value of their positions. Secondary risks (operational, tax, accounting, legal, regulatory, basis, and reputation) are amplified by scale but can be contained by deploying technology and being selective about trades.

Asset owners also face material counterparty risk in financing transactions, including unexpected market exposure due to loss of hedges, receipt of cash instead of securities or vice-versa, and limitations on the ability to terminate, replace, or increase financing when needed. Awareness of risks on both sides of the transaction can make for better partnership and fewer problems.

III. PRIMARY SOURCES OF FINANCING RISK

Many financial products share similar economics and inherent risks, and are often used interchangeably to lend cash, borrow cash, or source securities. Nonetheless, management of these products is often fragmented and distributed across business silos in accordance with market conventions. As a result, trades can be governed by inconsistent documentation, pricing, and risk policies. A list of these related financing activities includes:

- Margin lending and prime brokerage
- Collateralized lending
- Borrowing or lending of stocks or bonds
- Delta-one derivatives and total return swap trading
- Repo trading
- OTC forwards and listed futures trading
- OTC and listed trading of high delta options or option combinations (e.g., single stock collars, option boxes)
- Index, merger, and tax arbitrage trading
- ETF market-making
- ADR-to-ordinary conversion
- Clearing of cash and derivatives

Enterprise risk management is strengthened by recognizing the common aspects of these products. By applying consistent pricing and documentation terms across the spectrum, firms can simplify risk surveillance, monitor client behavior, optimize capital allocation, and maximize returns.

IV. REVELATIONS FROM THE ARCHEGOS TRANSACTIONS

When Archegos failed in early 2021, the lender banks were carrying large, unsecured credit exposure in their total return swap books. To varying degrees, these exposures were often unrecognized, ignored, or mispriced as a line of credit.[5]

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[5] Gregory Zuckerman, Juliet Chung and Maureen Farrell, "Inside Achegos's Epic Meltdown," The Wall Street Journal, April 1, 2021, https://www.wsj.com/articles/inside-archegoss-epic-meltdown-11617323530.

Furthermore, contagion could have spread to other banks planning to join the trade. There was neither safety in numbers, nor wisdom in the crowd.

Credit losses have since forced more businesses to answer to their boards and regulators. As prizefighter Mike Tyson famously said, “Everybody has a plan until they get punched in the mouth.” Banks must now adjust plans rather than tell themselves they were hit unfairly. Whether or not Archegos misled its counterparties, dealers that merely rationalize their losses may well be hit again.

Whether any of the transactions had been properly collateralized at inception, risk conditions deteriorated. Release of capital gains caused leverage to increase, while a decline in the liquidity of the positions amplified the collateral shortfall. In some cases, the increased exposure was approved explicitly, while in others it was not properly addressed. There are many possible points of failure that allow risk to run unabated, including erroneous calculations and disputed margin calls, unqualified or unsupervised traders, uncertain risk policies, inadequate controls, relationship considerations, or organizational dysfunction. After the default, many lenders suffered additional damage by being slow to act.

The reported losses also revealed that some firms carried unsecured exposure far greater than the expected profit of the trade, and in some cases the revenue of the entire business. They are now asking: “How much unsecured exposure is appropriate for an individual trade or aggregate book?”
A better question is: ***“How can we minimize unsecured credit exposure in securities finance?”***

V. THE CASE FOR MINIMIZING UNSECURED RISK IN SECURITIES FINANCE

For the purposes of this article on securities finance, “unsecured” refers to any loan or portion thereof that is not fully covered by collateral of equal or greater cash value at any point in time. The liquidation value of collateral is dynamic, and a shortfall may not be recognized until a liquidation event occurs. Because the shortfall equates to unrealized losses that may be realized unexpectedly, we argue it should be minimized, and under no conditions be allowed to persist or grow unaddressed.

At the heart of the Archegos losses was the conflation of secured and unsecured risks. The two kinds of risk coexist in financing transactions that are considered secured by a lien on assets that have an actual, post-liquidation cash value that is less than the amount of the loan. Whether the loan is labeled “secured” or “unsecured,” a shortfall in the cash value of any collateral pledged in support of the loan gives rise to an equal amount of unsecured credit exposure. A shortfall in collateral value also begins to explain why losses in securities finance and delta-one derivatives often come as a surprise, when collateral presumed to be adequate is discovered only too late to be insufficient or illiquid.

Contingent, unsecured credit risk cannot be fully eliminated from any transaction that is neither pre-funded nor fully paid for in cash. The question is whether securities finance businesses should actively seek to minimize this risk, or to accept it. A shortfall in the liquidation value of collateral may be deliberate or accidental. We begin by addressing the intent, then offer best practices to avoid the mistakes.

Transactions that minimize risk generally seek the return of capital, while transactions that knowingly take risks seek return on capital and are priced accordingly. Secured financing and unsecured credit extension are two distinct disciplines. The former relies on the dealer's ability to price and liquidate securities with little risk, while the latter relies on the promise and ability of the client to repay, which is beyond the dealer's control. Separation of these risks allows the bank's management to allocate capital across the business portfolio to achieve optimal returns. When significant risks are conflated, a host of problems arises, including a mismatch in the capabilities of the business and a mispricing of the risk itself. A call for additional collateral is the only means to reduce unsecured exposure, since affordable credit protection is unlikely to be available.

During periods of stress, securities finance businesses should return cash and balance sheet capacity as needed, rather than encumbering these resources. Banks need cash to settle trades and fund operations, and illiquid securities merely consume balance sheet at book value. Assets that are illiquid by size or character (art, wine, vehicles, machinery, exchange seats, private equity, real estate, large blocks, high-yield bonds, crypto-currencies) can prevent the lender from recovering all necessary cash from the proceeds of liquidation.

Secured financing desks should not generate losses, even if their clients go out of business. Other desks (unsecured lending, client trade facilitation) may expect occasional losses or "loss ratios" on their way to turning a net profit. Secured financing products and transactions should be fully hedged against market and credit risk as of their settlement date and managed to maintain this condition over time. The efficient and cost-effective functioning of financing markets depends on limiting credit losses such that the effects of a default are felt by the borrower, not the lender, and certainly not by other market participants.

VI. A BRIEF HISTORY OF UNSECURED RISK IN SECURITIES FINANCE

How is it that in 2021, a hedge fund, operating as a family office, could make concentrated bets and obtain unsecured credit lines for significant leverage?

For an answer, refer to the 1999 repeal of the Glass-Steagall provisions separating commercial from investment banking in the United States.[6] While banks with strong balance sheets and lending expertise could now facilitate the buying and selling of securities, they were not yet expert at pricing and trading collateral in the secured funding markets.

Sophisticated secured funding and collateral trading capabilities were first developed at broker-dealers (MS, GS, LEH, BSC, MER) to earn trading profits from customers while funding their own activities.

[6] S.900 – 106th Congress (1999-2000): Gramm-Leach-Bliley Act. (2019, November 12). https://www.congress.gov/106/plaws/publ102/PLAW-106publ102.pdf

Costly, unsecured funding (commercial paper) made it necessary for broker-dealers to "self-fund" by using securities on their respective balance sheets to raise cash at lower, secured rates. Broker-dealers, while active in credit derivatives and securitized loans, originated relatively few unsecured loans to customers.

In contrast, commercial banks entered the capital markets with a legacy of lending to customers on credit. With larger balance sheets and higher credit ratings of their own, these banks were able to raise cash at rates equal to those of secured funding transactions used by broker-dealers. As they grew their securities trading businesses, banks were able to use these advantages (large deposit books, cheap funding, and comfort with credit extension) to compete with broker-dealers in providing leverage to clients, often without developing collateral trading capabilities of their own.

In the years surrounding the repeal of Glass-Steagall, a pattern of extreme leverage followed by defaults resulted in catastrophic losses for investors in Long Term Capital Management in 1998; Enron in 2001; and Amaranth Advisors, Basis Capital, and Bear Stearns funds in 2006. Unsecured exposure to these clients also hit the dealers themselves, with each event a harbinger of the Financial Crisis that began in 2007. It is noteworthy that some dealers declined to trade with Enron (which had proposed total return swaps on its own stock collateralized by oil wells) and LTCM (which declined to post initial or variance margin on its swaps). The fact that years later any of these firms would suffer losses from Archegos suggests that policies change, or fact patterns go unrecognized.[7]

As credit gradually grew more important than collateral, the notion of liquid securities as "cash equivalents" became outdated. Lenders expressed a preference for cash over the hassle of liquidating securities, and instead relied primarily on credit. At the onset of the crisis, credit concerns prevented large banks from financing Treasury securities, even though the Treasurys themselves held their value in the flight to quality. The credit squeeze did not bode well for the self-funding model of the broker-dealers that were ultimately forced to transform themselves into banks.

Post-crisis, universal banks have acquired broker-dealers in order to trade, and larger broker-dealers themselves have become bank holding companies seeking to lend.[8] Practices associated with legacy banks have since prevailed over the more disciplined approach of the legacy broker-dealers, with many participants offering more leverage, taking less collateral, and running more unsecured exposure to their clients. Despite elevated capital rules and controls, securities financing businesses still incur losses and fines that put corporate boards and regulators on alert.

Today's banks and bank holding companies are better able to withstand a credit squeeze than broker-dealers ever were. Nonetheless, self-funding remains central to securities finance.

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[7] Hugh Son, "Morgan Stanley had $911 million in losses tied to Archegos fund meltdown," CNBC, April 16, 2021, https://www.cnbc.com/2021/04/16/morgan-stanley-had-911-million-in-losses-tied-to-archegos-fund-meltdown-.html

[8] Matt Levine, "Goldman Has Some New Divisions," Bloomberg, October 17, 2022, https://www.bloomberg.com/opinion/articles/2022-10-17/goldman-has-some-new-divisions.

If secured loans are kept collateralized and liquid, they will return cash instead of crystallizing losses or consuming balance sheet in the event of another crisis.

VII. PROSPECTS FOR FUTURE LOSSES

The practices that led to the Archegos losses persist in different contexts. We have already witnessed losses by technology-enabled lenders accepting cryptocurrencies as collateral.[9] Here, significant risks were on display, as lenders relied on collateral that was concentrated and subject to idiosyncratic events that caused collapses in price and reduction in liquidity. The nature of the lending carried risks of implicit shortfall that should have been estimated and reserved against. Losses were reinforced by a specific "wrong way risk" of high correlation between the value of the collateral and the credit of borrowers who were crypto investors themselves. Lenders that relied on "smart contracts" rather than human intervention may have fared better if automation was quick to call for additional collateral and to liquidate dispassionately; however, automation remains subject to hacking, and human oversight and judgment are still required. Recent experiences should serve as a warning to banks planning to offer custodial services to crypto investors, with demand for financing services sure to follow.

As this paper goes to press, the effects of unsecured leverage continue to tear through cryptocurrency markets, with lenders seeking liquidity to meet obligations and some filing for bankruptcy protection.[10,11] Deliberate or naïve disregard for financing risks will ultimately attract the necessary regulation to these marketplaces.

For a more conventional example, consider how financing the 2022 acquisition of Twitter engineered by investment bankers could end like the Archegos swaps offered by prime brokers. The Twitter financing was initially described as containing an unsecured loan alongside two supposedly secured financings: one labeled "margin loan" and the other labeled "collateralized bridge loan."[12]

While the relative amounts and structure undoubtedly changed prior to closing, collateral support for any portion of the financing is likely to consist of concentrated, directional positions with volatile prices and liquidity constraints. A shortfall in the value of this collateral will give rise to more unsecured exposure which may be compounded by correlation with the counterparty's credit.

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[9] Alex Hern, "Celsius Network: Cryptocurrency lender files for bankruptcy," The Guardian, July 13, 2022, https://www.theguardian.com/technology/2022/jul/14/celsius-networks-cryptocurrency-lender-files-for-bankruptcy.

[10] Caitlin Ostroff, Vicky Ge Huang and Alexander Gladstone, "FTX Files for Bankruptcy, CEO Sam Bankman-Fried Resigns," The Wall Street Journal, November 11, 2022, https://www.wsj.com/articles/ftx-files-for-chapter-11-bankruptcy-11668176869.

[11] Lauren Hirsch, David Yaffe-Bellany and Ephrat Livni, "Crypto Lender BlockFi Files for Bankruptcy as FTX Fallout Spreads," The New York Times, November 28, 2022, https://www.nytimes.com/2022/11/28/business/blockfi-bankruptcy-cryptocurrency-ftx.html.

[12] "Elon Musk unveils $46.5bn financing package to fund Twitter bid," Financial Times, April 21, 2022. https://www.ft.com/content/37c18d58-dae8-4816-bbdd-879338332152.

The fact patterns surrounding the two financings are similar, beginning with the media and regulatory attention attracted by the principal actors and ending with more unsecured exposure than the headlines would suggest due to illiquid collateral. The initial enthusiasm for the deal implies that banks are eager to take on unsecured risk, some of which could be mischaracterized and therefore mispriced and mismanaged.

Losses from securities finance or delta-one derivatives will almost certainly recur. Precise circumstances rarely repeat; nonetheless, the underlying risks persist and can inflict damage in new ways unless they are recognized and contained.

VIII. MANAGING SECURITIES FINANCE AND DELTA-ONE DERIVATIVES

Over decades of experience trading collateralized financing products and observing market participants, we have assembled best practices for scaling a securities finance business while keeping the associated risks under control. These practices can be used as a roadmap for building a business or to check the health of an existing one.

Best Practices for Businesses

1. Understand how trading and financing differ

Trading is the execution of buy and sell orders for the bank and its customers, earning commissions when the trade settles and putting capital at risk if necessary. Financing is the borrowing and lending of cash or securities required to settle and to carry any long and/or short positions that remain on the balance sheet as a consequence of that trading. Financing is therefore critical to the success of derivatives trading and client trade facilitation.

Financing charges accrue daily for as long as the position is on the bank's books. To ensure success in trading, the related financing must be maintained and released only when no longer needed.

When it supports trading, financing is an expense. If executed well, it can lower costs, make pricing more competitive, avoid adverse selection, and generate incremental revenues. If done poorly, higher running costs and miscalculated prices can generate losses. Financing for clients is a revenue opportunity that requires the same discipline. While financing is explicit in client transactions like margin or securities lending, it is implicit when packaged within delta-one derivatives that offer levered exposure to the reference securities.

2. Make financing a center of excellence

Financing of securities is a critical capability for any trading business. Recognize that financing for the house and for clients requires the same skills and capabilities. Centralized financing and management of collateral is analogous to the "central risk book" model followed by experienced trading firms to manage positions and improve margins. Financing aspects of capital markets products should be governed centrally under a common set of rules for pricing the balance sheet, obtaining contractual rights, and setting margin or equivalent requirements.

3. Know your sources of funding

Sophisticated firms rely on self-funding, raising the cash needed for trading and finance from securities already on the balance sheet. Self-funding is accomplished dynamically via downstream repos, swaps, and by lending securities to customers and other dealers. Traders who do not know how their transactions are funded in the market will have limited control over pricing and risk management. Funding from corporate treasury should be minimized to avoid putting pressure on the bank's unsecured lines in times of stress.

4. Know the cost of your balance sheet and the cost of carrying securities positions on it

Each liquid security has an interest rate at which it can be carried on the balance sheet, and a rate that must be paid to sustain a short position. These rates may be positive or negative and are independent of the prices at which the security can be bought or sold. Generic financing rates lead to mispricing of secured loans and derivatives where the rate is a significant input to pricing. Rates set by corporate treasury should apply only to residual unfunded exposures, if any.

5. Document your financing policies and procedures

Ideally, before the start of trading, each business should produce a manual of policies and procedures describing all aspects of the business, including:

- Product and transaction characteristics
- Legal entities used for booking trades
- Risks with corresponding management protocols and limits
- Client types and strategies
- Geographies and markets
- Client interaction scripts
- Thresholds and calculations governing variation margin
- LTV triggers requiring a call for additional (or release of excess) collateral
- Capital and balance sheet requirements and sources of financing
- The types of securities or portfolios that will be financed
- Margin haircuts by security type and period of risk (liquidity)
- Location and disposition of held collateral
- Policies and procedures for corporate actions and proxy voting
- Liquidation and client notification procedures
- Procedures for financing the positions of control persons vs. non-affiliates
- Pricing models

- Mitigation procedures for “wrong way” counterparty risks
- Term sheets and forms of documentation
- Technology requirements
- Tax, legal, compliance, and accounting issues and opinions

If the initial policies and procedures are uncommercial or “off-market,” they should be negotiated until all stakeholders agree. Failure to reach an agreement could be a sign that the proposed transactions are incompatible with the bank’s interests. An approved policies and procedures manual protects individuals from selective memory when a trade develops complications after inception. All stakeholders should reapprove any changes as the manual evolves over time.

6. Maintain tax, accounting, and legal opinion

Trades that are within policy require periodic review with counsel to ensure that changes to tax rules, accounting principles, and securities laws have not increased risk.

7. Manage by exception

Once policies, procedures, and limits are agreed, trades within policy should not require advance approval in the normal course of business. When clients seek to trade outside of normal parameters, the business must escalate the proposed transaction to the appropriate control functions before trading. Requiring approvals for exceptions rather than for every trade is the most efficient means of operation and implies trust and partnership between the business and its controls.

Best Practices for Transactions

8. Size the loan to the value of the securities, not the needs of the client

For liquid securities, setting margin, haircut, or collateral requirements at 2-3 standard deviations of price volatility over the liquidation period would give 95-99% confidence that any securities, collateral, and/or hedge can be liquidated to recover the loan. This approach keeps the tail risks of credit default or loss of funding small and remote. Don’t size the loan as a credit line; limit the loan to the value of the collateral at any point in time.

9. Don't finance assets you don't trade or can’t price

Rely on firsthand valuations, be wary of discounts for larger blocks, and determine your own LTV. Under no circumstances take prices from the counterparty or borrower. As a counterexample, we have seen loans against CDO equity booked as liquid shares and priced by the counterparty. These compound errors can mask millions in unsecured exposure.

10. Always have a liquidation strategy

Prepare for the worst. Rather than hope your client will not default, it is better to assume that at some point they will, and that you will need to liquidate the hedge, the collateral, or the client’s portfolio. Know the market for the securities you are financing and avoid positions you might not be able to sell.

Know when to initiate a liquidation and under whose authority. The ability to liquidate quickly, possibly under crisis conditions, can be the difference between no loss and a significant one.

11. Set rules for eligible securities and collateral

The character of both the securities being financed and any additional collateral is the key to minimizing risk. It is always best to finance portfolios rather than single securities, and portfolio construction rules are a common method of ensuring a sufficient amount of high-quality collateral.

- **Liquidity**
  A common guideline for securities finance is to keep the loan size below one day's average trading volume (ADTV) of the underlying securities, which implies more than a week of liquidation activity at 20% of ADTV per day to minimize market impact. For larger blocks, there will be no reliable data to compute a standard deviation of price volatility over the liquidation period. The size of the position should never exceed regulatory reporting thresholds that result in restrictions on the timing and manner of sale.

- **Diversification**
  When financing single securities and concentrated positions, idiosyncratic events or corporate actions can cause a rapid decline in value and significant increase in unsecured exposure. Well-diversified portfolios limit the "gap" risk associated with any single security, which should ideally account for no more than 5% of the portfolio being financed. Single-stock swaps represent a particular challenge if they are isolated and not part of a diversified portfolio of swaps.

- **Market Neutrality**
  Balanced longs and shorts serve to neutralize the effect of market dislocations. In contrast, net long and net short portfolios have more price volatility and correspondingly less loan value. In a rising interest rate environment, the absolute cost of leverage will rise, which also favors market-neutral, balanced strategies over directional bets. Market-neutral portfolios can be liquidated more slowly, provided you maintain the self-hedging quality as the positions are reduced.

- **Correlation**
  Collateral value should not be correlated to the credit of the borrower. High correlation (i.e., "wrong way" risk) implies that the value of the collateral will decrease just as the borrower defaults, reinforcing and potentially multiplying losses. Do not lend to a company or founder against the company's own stock or accept correlated securities as collateral.

- **Capital Charges**
  Certain collateral can be toxic from the standpoint of capital charges. Be clear on the capital treatment of your hedging instruments, and do not inadvertently give more leverage on a security than the bank itself gets.

12. Beware of crowded, directional trades

Risk managers must base their decisions on the most complete information possible. When you need to sell, others are likely to be selling as well, so learn the extent of the client's exposure held with other dealers. Obtain representations regarding the client's aggregate exposure to individual securities, including positions accumulated elsewhere. A good block desk (Equity or Debt Capital Markets) and distribution capability (Institutional Sales) will provide valuable insight into where to place large positions and at what discount. Understand the breadth of the market and the impact of size on liquidity. Had dealers actively verified the market for the Archegos holdings, they would have learned that Archegos itself was the largest buyer of the most significant positions, with little support from the rest of the market. LDI funds in the UK also experienced the risk of liquid collateral in a crowded market.

13. Don't finance securities you don't control

Client positions held elsewhere should not give false comfort or be confused with security. Assets held away may be evidence of creditworthiness; however, financing any part of a counterparty's balance sheet that is not in the custody of and pledged to the lender is effectively unsecured. Tri-party arrangements must ensure that the custodian is obligated to act as if the collateral was in your possession.

14. Don't take risk you aren't being paid to take

Unsecured transactions should include a compensatory credit spread, which can be significant for an unrated counterparty. Securities finance rarely incorporates a credit spread or fee. Unsecured exposure should be avoided, hedged, or booked elsewhere at appropriate rates.

Best Practices for Documents

15. Negotiate term sheets, not contracts

Use of term sheets streamlines trading. Agreeing to all significant terms at the business level facilitates quick completion of downstream checks, approvals, and documentation. Businesses that do not fully negotiate their own terms experience delays measured in months, as lawyers and various control functions fill in the blanks.

16. Obtain and enforce contractual rights

Protections offered under financing contracts must be negotiated and enforced without hesitation. Eligible collateral requirements, periodic or threshold resets, and bilateral termination rights provide the means to contain or exit from escalating risk over the life of a transaction. With the ability to reset payments or call for additional collateral, dealers can move quickly to contain risk. Should a liquidation become necessary, proper documentation will ensure that the dealer has possession of collateral or pledged securities that are freely saleable.

17. Beware of “term” financing

Transactions with a fixed maturity and terms carry increased risk because initial assumptions can change with market conditions. Term financing facilities should set clear rules for portfolio construction and liquidity and contain protocols to address any breach, including collateral calls, payment resets, or termination. Client strategies may require reliable sources of financing, and dealers should be comfortable fixing the margin calculation methodology for a period of time, but not the amount of margin itself.

18. Maintain consistency across products dealing with the same client

Asymmetries in documentation across products (financing or otherwise) present their own challenges in a liquidation. Technical or actual default conditions can trigger cross-defaults and create cascading demands for collateral or payment. These in turn can accelerate a client’s move into bankruptcy and hamper further attempts to recover the loan. Harmonization of cure periods and other contractual terms across financing products leads to greater control and less confusion.

19. Exercise caution when relying on “master netting” agreements across borders

By trading multiple products, clients will inevitably face multiple bank legal entities around the world and yet expect the bank to issue a single margin call and to use excess collateral from one trade to secure another. Netting agreements presume that a client’s cash or collateral can be moved from one legal entity to another in the event of a default, which might not be enforceable in bankruptcy outside of the US. If you must rely on netting agreements, obtain enforceability opinions from local counsel in all affected jurisdictions. More conservative firms deploy a system of debits and credits to redistribute collateral as needed. While these movements require customer consent, they allow the dealer to offer a single, cross-product margin call confident that each individual product and legal entity is adequately collateralized. If a client enters bankruptcy, properly collateralized legal entities will avoid funding shortfalls and trapped capital.

Best Practices for Risk Management and Culture

20. Ensure trust between businesses and control groups

Management guru Peter Drucker observed, “culture eats strategy for breakfast.” This is particularly true of risk strategy, which breaks down when business units and their control functions do not trust each other. Trust is eroded when businesses run risk in excess of limits or seek approvals for transactions without complete disclosure of risks. Overbearing control groups that require a review of every trade discourage traders and stifle commercial success. Business flows productively and efficiently when trust is earned through transparency and respect for limits.

21. Celebrate good judgement

Don’t condemn risk management decisions as uncommercial or damaging to the client franchise. Ensure that it is acceptable for anyone to turn away a client, or to terminate a profitable trade based on an assessment of risk.

22. Continuously challenge assumptions

Regularly review pricing models, data inputs, and market conditions. Only the actual cash value of collateral post-liquidation matters, so review your exit strategies. Don't simply trust the information provided by the counterparty. Experience warns, "if you plan for a 2-sigma event, you will get a 3-sigma event." Complacency, though often rewarded, can be punished severely and without warning. Look through basic assumptions and reserve against implicit collateral shortfalls until additional collateral can be called for.

23. Manage to maximum loss

The unsecured exposure in the Archegos transactions was large, binary, and offered no historical data to support default statistics. A probability-weighted view of binary event risk always understates the actual loss. Counterparty credit models applied to financing should consider maximum loss rather than average loss, and businesses should reserve against this loss if the unsecured exposure cannot be quickly reduced by a collateral call or other means. Similarly, if a transaction relies on aggressive tax or legal opinions, place a reserve on the expected revenues.

24. Don't just measure, act

Address rising risks promptly, rather than allowing them to grow. Be cautious about rewriting risk guidelines to accommodate profitable transactions. Draw lines and stick to them. Regular, frequent marks-to-market and calls for additional collateral will preserve critical buffers.

25. Avoid counterparty RWA in secured financing products

Securities finance should attract leverage capital and avoid risk-weighted capital by deflecting illiquid collateral and collateral shortfalls. Operational RWA cannot be avoided; however, bank management can more effectively optimize capital deployment if businesses that attract significant RWA are separated from those that contribute to leverage ratio. Failure to separate credit-bearing and secured products will only support the call for capital requirements at the most conservative and costly levels.

Best Practices for Organizations

26. Clarify roles and responsibilities

The roles and responsibilities for first- and second-line models for risk management must be clearly defined. The first line is the business itself (the P&L owner), and the second line is the control functions that set limits and provide oversight of the business. The first line is responsible for originating and managing risks associated with all trades on the books, within guidelines co-designed and approved by the various control functions in the second line. Identify the person (usually the head of the business) responsible for exercising protective rights, terminating a trade, and, if necessary, liquidating a client.

27. Balance businesses and controls

A successful operation requires equally robust business and controls. A dominant control function may take over trading decisions, leaving the business to abdicate responsibility over its book and devolve into a transaction processing unit. Archegos provides a case in point: Approval by the credit function at some banks allowed the business to proceed without sufficient collateral, resulting in unclear responsibility when the trade went bad. In contrast, a dominant business may bypass approvals or fail to inform control groups. It may also hire its own people to look at different aspects of risk, creating shadow organizations, conflicts of interest, and higher costs.

28. Align responsibilities to incentives

In the two-line risk model, the business owns the P&L and may receive large but volatile bonuses, while the control functions protect the firm from extreme financial and reputational loss, but receive lower, less volatile compensation. These areas will come into conflict over conservative risk policies. Be clear about situations where the business has discretion and when the control view must prevail. Don't turn a control function into a revenue center, and don't let businesses determine their own risk limits.

Best Practices for Client Management

29. Be careful when taking on business that competitors don't want

Prime brokers are consolidating through acquisition or exit. Consolidation puts pressure on smaller funds and those with more aggressive strategies. Established firms are now trying to upgrade the quality of their books by offboarding such clients, so brokers trying to grow should be cautious of adverse selection. Small clients can be as costly to serve as large clients, and strategies that rely on greater leverage contain more risk for the lender.

30. Avoid extending unsecured credit to unrated counterparties

Most hedge funds and family offices are responsible businesses with professional leadership; however, few have established credit ratings, permanent capital, or mature processes, and most are dependent on idiosyncratic individuals. Such clients are not appropriate for unsecured loans at institutional sizes or below-market interest rates.

31. Don't equate counterparty approval with credit approval

Each client should be pre-qualified for appropriate capacity and authority, resources, and infrastructure. Counterparty approval given by the credit function does not imply the approval of an unsecured line of credit. Securities finance desks should be able to transact following counterparty approval, but only with sufficient collateral rather than credit lines.

32. Maintain consistent client policies across different business units

Many banks cover family offices and institutional investors out of different business units (a private bank and investment bank, respectively). The legal character of a client may determine how they are covered but does not change the nature of the risks. Archegos offers a case in point, by operating a hedge fund strategy within a family office.

33. Ask the business purpose of the financing

Transactions, especially multi-leg, over-the-counter derivatives, should have a primary business purpose other than tax, accounting, or regulatory arbitrage. Common legitimate business purposes include market access as well as the packaging of financing, execution and clearing for operational ease.

34. Be able to say “no” to clients

Clients may get angry and make threats in the heat of the moment, but they will ultimately respect dealers that understand risk and may even save them from themselves. The best clients prefer to work with firms that are smart, rather than take advantage of those that are not. Don’t over-advocate for clients or put revenues ahead of risk management.

Best Practices for Building Skills and Capabilities

35. Build or acquire the necessary tools and data to compete

Technology is critical to scaling a business while keeping risks under control and minimizing process variability. Maintain access to CUSIP-level financing rates (both long and short) with systems to manage the marginal cost of borrow and recall risk; implement dynamic liquidity estimates and margin calculations; and establish tracking for multi-legged transactions in different products and currencies. Technology can also enable a bank to serve entire client segments, such as process-driven hedge funds that rely on automated execution and financing.

36. Maintain a client-centric view of products and risks

Manage each client as a single relationship for both profitability and risk. An issue with one product may affect every other business unit that shares the client, so ensure that you can quickly aggregate a snapshot of the client’s activity and assemble related documentation. Coordinate your response to credit events among all stakeholders.

37. Use technology to control client activity

Firms that cannot selectively restrict trading will allocate both capital and credit capacity inefficiently. Onboarding clients is best done centrally; however, account openings should be restricted to suitable activities. Technology should support the selective activation of trading accounts for designated products. For example, technology should permit a hedge fund with liquid equities to trade on margin or use collateralized total return swaps, while restricting the same client from trading credit default swaps without the corresponding bond positions.

38. Align professional expertise with risk factors

Financing professionals must have diverse knowledge that covers collateral valuation and trading; multiple forms of documentation; multi-jurisdictional tax rules; accounting conventions; securities laws; client business models; and investment strategies. Credit analysis and spread pricing capability is neither necessary nor common.

IX. FINAL THOUGHTS

Credit risk exists throughout financial markets, but unsecured credit lines are neither necessary nor appropriate for every transaction. Dealers with properly collateralized transactions should rarely experience credit losses, and certainly not of a destructive magnitude. As proven by the Archegos meltdown and similar incidents that came before and after, use of credit to provide leverage in otherwise secured and liquid markets can harm not only the transaction participants but the broader system as well.

The only way to have avoided damage from the Archegos swaps was to have called for more collateral sooner, or to have declined to trade in the first place. In some of the loss-making transactions noted in this paper, banks with more conservative RWA computations for secured funding transactions declined to trade and avoided losses on the basis that the transactions failed to meet return hurdles. This much is encouraging.

Until all market participants have a common understanding of financing risk, dealers will be tested for their ability to hold a line on terms, walk away, or withstand a sizeable loss. Sometimes, the best business you do is the business you don't do.

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