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THEMATIC SPOTLIGHT

at the intersection of policy and markets

CONCENTRATION IS LEVERAGE

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Bill Hwang dubbed his family office Archegos, a new testament reference to the "archegos of life," meaning 'the one who leads the way.' Despite the firm's prophetic origin, Hwang was a leader without a plan – or at least without an exit strategy. The firm imploded in the final days of March as its pyramid of swap positions was unwound by its counterparties. These banks raced to escape the damage and debris of the pending collapse via a chaotic spiral of heavily discounted block trades. Amongst Hwang's enablers, those being the 'first to flee' rather than 'the one who leads the way' seemingly proved the optimal loss avoidance strategy. In sifting through the rubble, it appears the scope and overlap of Archegos exposures presaged these massive dislocations that continue to stun equity markets and the prime brokerage community.

Was this an outlier or an indicator of systemic fragility?

Both. And neither.

The archetypal narrative for this incident is that Archegos was fueled by excess leverage, flying Icarus-like with its 8x levered positions. However, it was not leverage per se that melted those waxen wings. The culprits were portfolio concentration and opacity, both truly unprecedented in scope.

Many risk-managed, diversified funds regularly navigate a range of market conditions with similar or greater leverage than Archegos' reported 8-1.

The risk management lesson is (clear): concentration is perhaps the least manageable form of leverage.

The difference is that Archegos was characterized as a family office, not an SEC-registered advisor, which is required to disclose its positions to both its counterparties and the market at large; one will not find an Archegos '13F.'

As importantly, the word "diversified" is doing a lot of work in contrasting between Archegos and other funds. Said differently, Hwang's firm ran at a reckless level of concentration along three distinct vectors:

(1) Portfolio concentration: relatively few and highly correlated positions

Several individual positions were in excess of 10% of long market value (LMV) and the overall long book appeared to be highly correlated bets on Chinese internet firms as well as midcap US media and e-commerce companies. From media accounts, the short book was mostly index and ETF hedges which couldn't possibly offset specific and correlated risks apart from some crude beta minimization. This was particularly true when realized risks were as much endogenous as exogenous.

(2) Position concentration: company stake sizes relative to float / daily liquidity

Hwang built effective economic ownership stakes in a whopping 10-20% range of several companies such as Baidu, Viacom, and GSX TechEdu (as evidenced by block trade sizes and the time series of swap counterparty filings). Aggregating his swap positions, Hwang would effectively be either the largest or a top 3-4 shareholder (alongside Vanguard, Blackrock, and T. Rowe Price) in many of his positions, unbeknownst to both the market and, for the most part, the management of the underlying companies. In most instances, these aggregate positions would constitute 5-10x average daily trading volume in such holdings, creating substantial effective illiquidity by virtue of the portfolio construction, despite most positions being nominally considered liquid, public equities.

(3) Financing concentration: using swap counterparties to amplify rather than spread positioning risk

Many of Hwang's financiers reportedly were unaware that he held similar, often larger positions in the same equities at other counterparties, eight or more in total. Such stacking and mirroring of positions not only obscured portfolio clustering, but also created vulnerability to a domino effect whereby, even on a single-name basis, an involuntary liquidation would almost certainly have a cascading impact. These concentrations soiled portfolio hygiene beyond the point that it could tolerate much, if any, financial leverage.

How?

The motivating feature of this scheme is Archegos' status as a family office as opposed to a regulated fund. Hwang was able to operate at a mammoth scale without an apparent legal requirement to disclose any of the firm's activities to anyone. By all accounts, Hwang did not have LPs and, therefore, was not accountable to external tolerances or scrutiny, never mind functional curbs on hubris such as articulating an exit strategy in their investment process. Mechanically, Archegos would never actually step into beneficial ownership positions in its various swap arrangements, so its counterparties would hold securities in their name and no aggregation across brokers was legally required nor, apparently, were disclosures around control and influence, such as forms 13G or 13D, deemed necessary.

Exhibit 1: Shareholdings in GSX TechEdu
(known swap counterparties in gray)

Holder name	Position	Latest Chg	Filing Date	% Out
Goldman Sachs	31,662,834	11,046,510	1/29/21	21.88
Morgan Stanley	14,663,017	14,663,017	12/31/20	10.13
UBS	11,642,879	2,823,398	12/31/20	8.05
Nomura	10,690,836	1,821,734	12/31/20	7.39
Credit Suisse	8,641,773	-2,909,373	02/26/21	5.97
BofA	5,915,959	1,576,514	12/31/20	4.09
Citigroup	4,869,878	-2,089,278	12/31/20	3.37
JPMorgan	4,051,857	1,653,363	12/31/20	2.80
Tiger Global	3,020,769	0	12/31/20	2.09
BlackRock	3,009,551	655,012	12/31/20	2.08
Mizuho	2,524,353	2,524,353	12/31/20	1.74
Vanguard	1,653,661	15,454	12/31/20	1.14
State Street	1,538,951	12,700	12/31/20	1.06
Canada Pension	1,330,958	1,101,958	12/31/20	0.92
MUFG Securities	1,300,004	1,300,004	12/31/20	0.90
Alberta Inv. Mgmt.	925,000	925,000	12/31/20	0.64
SG Americas Sec.	813,101	783,452	12/31/20	0.56
Krane Funds	789,928	-327,250	12/31/20	0.55
Barclays	650,994	199,033	12/31/20	0.45
Voloridge	640,445	421,000	12/31/20	0.44

Exhibit 2: Shareholdings in Viacom
(known swap counterparties in gray)

Holder name	Position	Latest Chg	Filing Date	% Out
Vanguard	59,266,423	0	12/31/20	9.79
BlackRock	46,512,963	8,854,591	12/31/20	7.68
Morgan Stanley	43,222,024	7,106,259	12/31/20	7.14
Credit Suisse	36,399,458	1,046,791	04/01/21	6.01
State Street	33,107,767	32,349	02/26/21	5.47
NAIRI	31,365,426	4,500,000	03/25/21	5.18
Nomura	20,534,470	18,865,575	12/31/20	3.39
UBS	12,950,299	-2,617,742	12/31/20	2.14
Goldman Sachs	10,301,597	4,502,015	12/31/20	1.70
Geode Capital	9,879,033	129,550	12/31/20	1.63
T. Rowe Price	9,768,179	-70,528	12/31/20	1.61
FMR	8,656,353	-284,641	04/01/21	1.43
Charles Schwab	8,435,691	830,854	12/31/20	1.39
BofA	8,183,946	2,259,206	12/31/20	1.35
Capital Group	7,850,640	-370,310	12/31/20	1.30
Norges	7,368,207	1,686,913	12/31/20	1.22
Northern Trust	6,142,308	-175,378	12/31/20	1.01
Deutsche Bank	5,900,020	1,964,062	12/31/20	0.97
LSV Asset Mgmt.	5,592,153	-36,406	12/31/20	0.92
Macquarie	5,099,940	4,605,311	12/31/20	0.84

Source: Bloomberg Finance LP

To a casual observer – which apparently includes many of Hwang's swap counterparties – it might look as though the shareholder registers of Archegos' holdings were diversified. In fact, many of the largest positions on these registers were Archegos swaps simply held in different names. The positions were built and financed in silos but managed in concert by Hwang.

In some cases, these financing banks saw unprecedented growth in their swap businesses given that the scope and aggressiveness of this sort of layering has few parallels.

The FT obtained (and has since removed) a slide from a Nomura presentation showing the financing balances of its holdings, and it's evident that there's a greater than 500% increase in US financing balances between early 2020 and early 2021. On the other hand, Asia ex-Japan, Japan, and the EMEA regions remained relatively steady over the same time period. While it is not clear what proportion of these balances Archegos constituted, we believe we can piece together, from the time series of swap counterparty disclosures, that the fund was continuously adding to its positions through the same period.

So long as its portfolio was gaining and it could add to positions without having to add cash to maintain margin levels, Archegos could generate substantial returns and the financing desks would be unaware that both their exposures and the underlying concentrations were growing, notwithstanding the paper gains they would have been enjoying. It appears that Archegos continued to add new counterparties—although perhaps not new positions—to increase position size, presumably without leaving a footprint. With each concentration ratchet and each new layer of swap counterparty, vulnerability grew.

The Set-Up

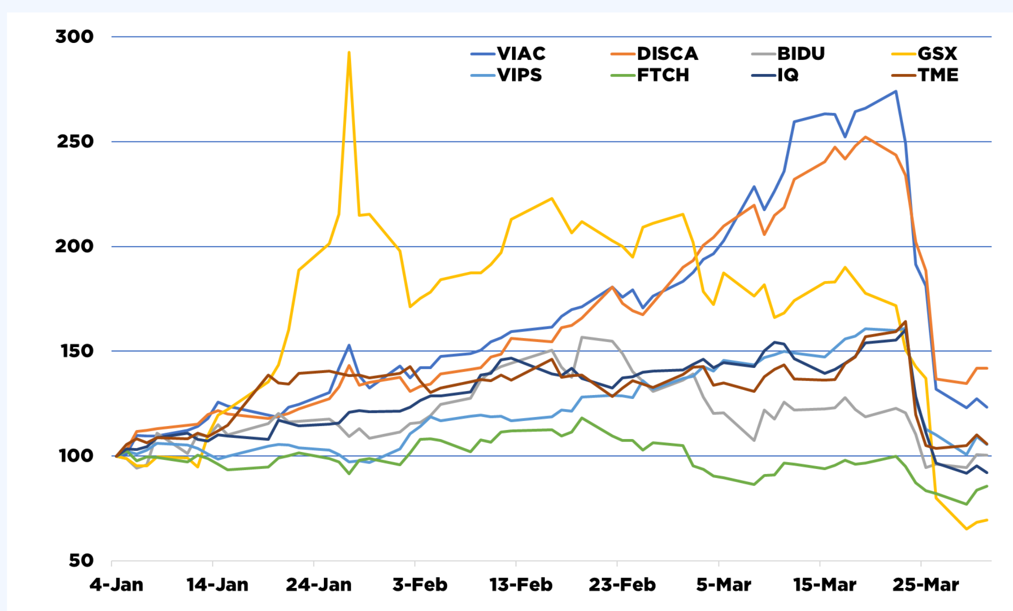
The January squeezes in GameStop and similar Reddit darlings created an environment whereby the market accepted both significantly higher amplitudes and durations of upside dislocations. Simply, many managers adapted by adopting an aversion to shorting any unexplained phenomena: a 'cover now, ask questions later' approach. In our view, the GameStop events were an important example of over-concentration and unanticipated correlation (some crowding-related) from the short side of the portfolio. More broadly, however, the late January squeezes and unwinds represented a sort of blow-off top for the growth trade that had been working for so long and with such limited volatility so as to invite complacency. GameStop and related shorts were, broadly speaking, a vestige of the "Amazon vs everything" digitization and e-commerce trade that sat at the intersection of tech and consumer expertise and was a working trade for the past five years or more. Some managers simply stayed in some version of that trade for longer than the associated risk/reward merited, and January was a realization point.

Not for Hwang, however. Archegos benefited directly from the GameStop/squeeze phenomenon in January as one of its largest and most concentrated holdings, GSX TechEdu Inc, which also had a very high short interest, had nearly tripled between the start of the year and the third week of January. It does not appear that Hwang took profits during this stunning run-up but instead seems to have accumulated still larger positions in GSX and several other Chinese internet firms. The collective timidity of a market burned by shorts in January allowed sharper and greater gains in these positions; there was no effective check on inexplicably soaring prices. These stocks would crest meaningfully in late February to mid-March. Some declines were at least in part due to regulatory events in China and in the US with respect to accounting and listing treatment of Chinese ADRs. For example, Hwang was reportedly significantly invested in Chinese vaping company RLX Technologies and would have faced a material setback as the stock halved in mid-March due to regulatory changes in the Chinese e-cigarette market. More broadly, however, the rising rate environment and accompanying multiple compression for expensive growth stocks began to prove a very substantial headwind by mid-March. The tide was receding but Hwang, with or without appropriate bathing attire, kept swimming – whether because he had to or he was so used to it that it didn't occur to him to stop.

Why Now?

Perhaps to offset what would have been accumulating and perhaps otherwise unmanageable losses, Hwang began to add to his already massive positions in Viacom and Discovery, media firms who were late adopters to streaming business models. These stocks had begun to outperform amidst the GameStop-adjacent short squeezes in January, at least in part as managers got out of the way of apparent squeezes. Both Viacom and Discovery had sizable short interests motivated by their status as laggards in the race to go "over the top." By March, however, the stratospheric ascent of these prices (Viacom held the title of best performing stock YTD in the S&P for much of February and March) could no longer be explained by short covering. In retrospect, we now understand that these stocks' more-than-doubling in the course of a month–even as the other stocks in Hwang's portfolio were collapsing–was the result of an unprecedented, nearly frantic accumulation of stock by Archegos, likely motivated by a desire to offset those prior losses.

Indexed 2021 Price Behavior of Largest Swap Positions Jan 4 = 100



Source: Bloomberg Finance LP

This juggling act of concentration, leverage, and P&L hole-plugging collapsed on itself shortly after Viacom announced a primary stock sale and mandatory convert issuance of, together, $3b after hours on March 22. In narrative space, whatever possible justification the market may have spun for Viacom's dizzying stock ascent, the company's issuing stock lanced the balloon. Mechanically, there might have been simply too much volume for Archegos – which may well have indirectly accumulated via swap arrangements some 15-20% of the company's stock already – to absorb, particularly as many of its financiers were also underwriters of the issuance. Even if it might have planned to add further, it would have by then been difficult to secure the wherewithal. In quick succession, analyst downgrades and Viacom's controlling shareholder's registration of its own shares further deflated the price by March 24. Viacom was such an enormous piece of Hwang's concentrated portfolio that Archegos couldn't possibly sidestep the margin impact of such a rapid setback.

It is not clear exactly when or in what order the financing banks realized the intractable nature of the problem. The scope of Archegos' holdings, and thus the massively correlated and concentrated risks the banks themselves held, was by most accounts obscured. One can imagine, however, that a meeting of these banks on Thursday the 25th of March – according to media reports intended to coordinate an orderly liquidation – was in fact a realization point for some.

The reality of this layered concentration was that when mark-to-market P&L wiped out posted swap margin, Archegos would no longer be counterparty to the banks: in a sense, they would become counterparties to one another. Had Archegos held – via swap or on its books – a diversified, uncorrelated, and liquid portfolio, even in a forced wind-down, its counterparties might have held collateral for some time without fear of a race-to-the-bottom. However, Archegos' cavalier concentration – perhaps unbeknownst to its counterparties – invalidated the critical feature of collateral: ease of sale. In this case, market impact models and any non-correlation assumption in a liquidation decision would have been decimated by the layered holdings Hwang orchestrated. Each bank was thus hostage to the decision of a first mover once Hwang himself lost control.

By early in the morning of March 26th, the sprint out from under this collapsing mass was underway with Goldman and Morgan Stanley the first to move. The inputs into the game theory calculus would have varied across these financiers, with perhaps the two most important being (a) margin cushion (and thus ability to discount blocks without taking a direct loss) and (b) degree of exposure to cross-held and concentrated positions (and thus dependency on the fortitude of others).On each of these fronts, the 'first to flee' would have best weathered the maelstrom. The concentration and stacking – not leverage per se – created this unmanageable co-dependency which was substantially amplified because it had been so obscured ex ante.

What Next?

The Archegos collapse will probably leave in its wake some further deleveraging. At the margins, some of the exposed banks may tighten swap availability formally or informally or in some cases may de-emphasize this business line. Others will step into their place. Most resulting deleveraging will more likely be voluntary and driven by higher realized volatility and difficulty parameterizing asset prices which should lead to lower gross exposures.

We believe that the more lasting impact will be on disclosure requirements. This will very likely be the focus of bank and securities regulators, in particular the loophole available to family offices and the anonymity afforded by holding positions – including massive, concentrated ones – on swap. The brokers involved will point to disclosure improvements as a fixable feature of this incident which will not impair their otherwise healthy lending businesses going forward, particularly as many of their clients manage diversified and publicly disclosed portfolios.

The risk management lesson is even clearer: concentration is perhaps the least manageable form of leverage. As allocators, portfolio managers, and risk managers, we habitually scan the horizon for the iceberg that might sink a Titanic steered by hubris. That metaphor fails here. The vulnerability for Archegos was not external. It was no Titanic, but rather a Hindenburg inevitably imploding as its concentration intensified. This should prove a useful motivator to examine portfolios and holdings for un- or under-appreciated concentration, particularly in a rising rate environment.

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