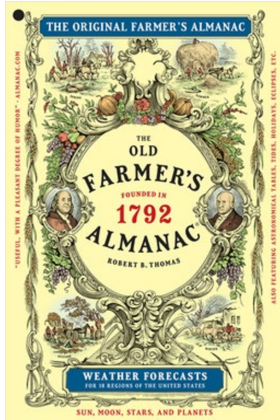
In the Gaps

Ares Alternative Credit Newsletter

Winter 2023

Spring Is Coming



In 1792, during George Washington's first term, a farmer and schoolteacher named Robert Thomas published the first edition of *The Farmer's Almanac*. Based on his own observations and formulas, Thomas laid out a set of predictions for weather and other phenomena for the coming *year*.

The proprietary formulas on which these predictions were based remain in use today, safeguarded inside a black tin box in Dublin, New Hampshire. Despite being forecasts of complex and highly dynamic systems, Thomas' long-range forecasts have a 230-year track record with a *shockingly* high accuracy rate of 80%.

Recently, these pages have taken on a bit of an almanac vibe. We have dedicated much of the last few editions of this newsletter pointing to data that we believe are precursors to economic and market stresses. Flash floods and droughts of liquidity, squall lines of volatility, and major shifts in the jet streams of capital flows.

While our forecasts were not produced using proprietary formulas we keep in a tin box, they were based on data and years of experience. We were right to raise the alarm (and early!) about deteriorating consumer credit performance, the approaching housing slump, emerging tail risks in corporate credit portfolios, the inscrutable risks in cryptocurrency and untenable valuations in music catalogs. We'll keep pointing out risks in these pages as we see them on the horizon.

However, just as sunny skies and calm air often follow the passage of a strong cold front, some of the best investment opportunities often emerge in the wake of economic or market stresses.

In our Alternative Credit white paper, entitled *The Road Less Travelled*, we wrote:

> *"... Market stresses and economic cycles can create mismatches in the supply and demand for capital thus creating opportunities for Alternative Credit investors... By providing capital solutions that traditional markets do not or cannot, Alternative Credit managers can create value and deliver attractive returns to investors."*

In this edition of *In the Gaps*, while we again cover a wide ranging set of data and observations, the common denominators can be summarized in two words: **liquidity & capital**. We believe these two factors are the primary source of market weather right now, and will usher in a new season of risk and opportunity.

While the bright radiant sun in centre glows,
The earth in annual motion round it goes;
At the same time on its own axis reels,
And gives us change of seasons as it wheels.

Introduction, Farmer's Almanac, 1792

We thank our wonderful team (now at 60 investment professionals!) for their many contributions and insights in this edition. We also thank so many of you for joining us during our team's Annual General Meeting, held in person and streaming last quarter in New York City. We are grateful for your attendance and continued support.

We are pleased to have *Khan Academy* as this edition's charity spotlight. Perhaps known best for their education tutorial videos, *Khan Academy* is having a truly global impact on school curricula and access to education. Further, members of our team recently spent a week in India to meet with a number of charities as part of our team's due diligence efforts around global health and education charities. It was an unforgettable experience on every level.

> "It doesn't matter that water covers 71% of the Earth's surface when your house is on fire. You need water right now and on location."

Liquidity and Capital

Liquidity is one of those ubiquitous financial markets concepts whose definition is nebulous, yet everyone seems to think they have a handle on it. We would argue that liquidity shocks and stresses underpin nearly every major challenge in the economy and markets today. At the same time, liquidity shocks are almost always harbingers of capital dislocations and credit cycles, especially when they occur during times of economic fragility.

It frankly doesn't matter that trillions of dollars of dry powder are sitting on the sidelines. Why shouldn't that matter? Because liquidity is not measured as a sum total of cash in the system; rather, it's a function of time and proximity. Said differently, it doesn't matter that water covers 71% of the Earth's surface when your house is on fire. You need water right now and on location.

That principle is the context for understanding the **capital** implications arising out of the wave of nominally gigantic liquidity shocks that cascaded through financial markets last quarter, including significant margin calls associated with FX hedges and interest rate derivatives. Constrained capital at many large banks arising from many factors, discussed in detail below, exacerbated the liquidity stress.

We view these events as having two distinct effects on capital. There is the immediate impact from dealing with the stress or shock; we'll refer to that as **primary**. What generally follows is a longer term dislocation of capital as market constituents recover or change capital decisions for a time; we'll refer to that as **secondary**.

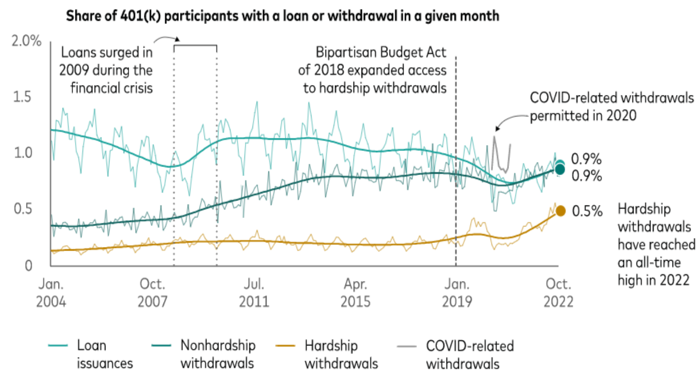
Inside the Data

HOUSEHOLD LIQUIDITY AND CAPITAL

Liquidity stresses that lead to large scale capital dislocations can sometimes arise from *microeconomic* phenomena. We recently met with a European pension fund manager; a long-established pension with a relatively aged client base. Consequently, this pension fund was in the "payout" phase of its life. The payout phase generally follows a steady, actuarially predictable path, a slow melting ice cube.

However, for most of 2022, this pension saw a sharp increase in withdrawals by its clients. Retirees were making unexpectedly large withdrawals to pay for shockingly expensive utility bills they faced due to the cost of energy. By October, one such individual had already paid the equivalent of $15,000 in energy bills… with winter months still ahead.

Households' need for cash is especially evident in all-time highs for hardship withdrawals



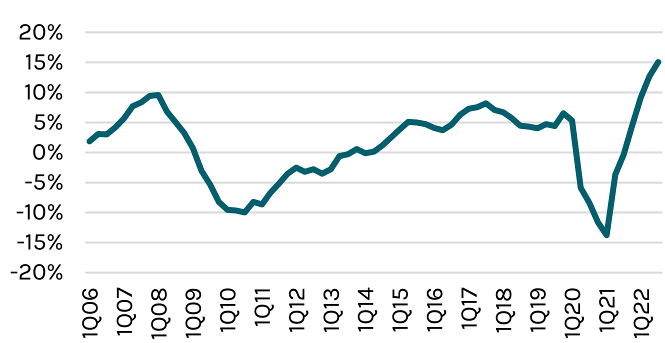
Source: Vanguard.

To a lesser extent, but for similar reasons, the same phenomenon is happening elsewhere. Vanguard, a U.S. asset manager, recently reported that "hardship withdrawals" out of personal retirement accounts have now reached an all-time high (see chart above). Account holders may withdraw funds prematurely only to cover "an immediate and heavy financial need" according to IRS rules.

Extrapolate and your microeconomic liquidity stress quickly becomes a macro **capital** phenomenon, as institutional investors sell assets to meet those cash demands. That's the **primary** effect playing out across households and institutional asset managers across the globe.

The **secondary** effect of this household liquidity and capital story is the increasing demand many consumer lenders are currently facing as savings are depleted and households increasingly turn to debt to finance their continued spending. That is, we are seeing a rapid transition from increasing savings to increasing indebtedness at the microeconomic, household level.

YoY Change in Credit Card Balances



Source: NY Fed, Household Consumer Debt.

Amid the transition, the macro impact is almost undetectable. Consumption and behavior remain largely unchanged while the music plays. Now introduce credit contraction and an economic cycle and the capital picture with respect to consumers and households becomes radically different. The impact will likely be quite uneven. Certain segments and sectors may remain relatively unaffected. However, where gaps in capital do emerge, we believe they could be enormous given the absolute size of household capital in today's economies.

BANK LIQUIDITY AND CAPITAL

U.S. banks face a number of challenges right now. Each challenge is significant in its own right. In combination, however, the implications on market liquidity and capital speak volumes about the role that banks will play (or not) in the coming months of market stress. Let's take each challenge in turn, and then look at the corresponding implications.

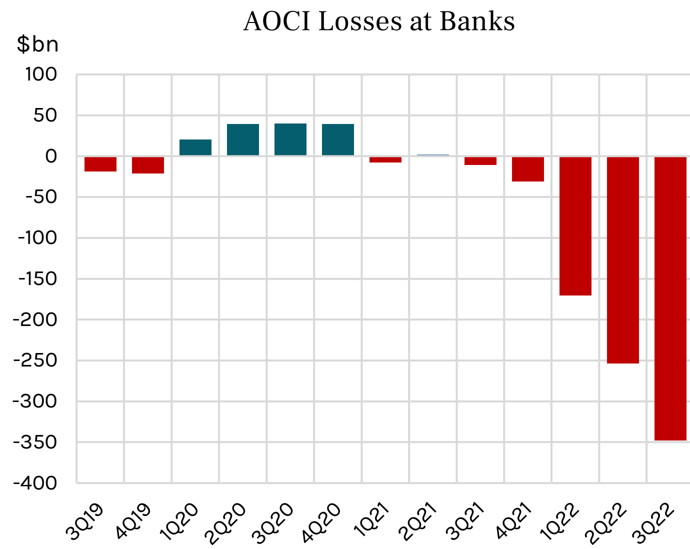
First, U.S. bank regulators recently imposed higher capital ratios despite existing capital ratios being robust. Our sources indicate that the ulterior motive of regulators is to constrain bank lending activity, which can be inflationary because of the money multiplier effect in the economy. Some banks have been told outright to reduce their balance sheet.[1]

This is coming at a time when banks would very much like to be taking advantage of a higher interest rate and credit spread environment. More on that in a moment.

Second, U.S. banks have taken massive losses associated with residential mortgages. We highlighted the economic difficulties facing mortgage originators in our last letter. To wit: mortgage originators have lost money on the large majority of the mortgages they created in 2022. In aggregate, the amounts are staggering: hundreds of billions of dollars of capital has been destroyed simply as a function of originating mortgages.[1]

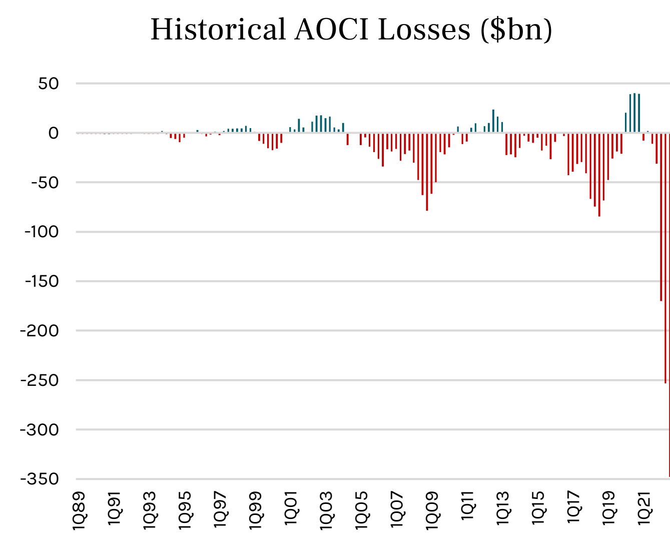
Many of these mark-to-market losses were realized in cases where originators sold their newly created mortgages to third parties or into a securitization. An even larger amount of losses were incurred in cases where banks originated the mortgages and retained them. These are called *accumulated other comprehensive income* ("AOCI") losses.

Despite being unrealized, banks are nevertheless required to reserve capital against AOCI losses. The effect on capital is the same as if the mortgages had been sold and the loss realized.



Source: Barclays Research, FDIC.

The chart above shows the reported AOCI losses at U.S. commercial and savings banks, and savings and loan associations… over $770 billion through 3Q22 alone. To put these AOCI losses into a broader historical context, the following graph illustrates how they compare to previous periods, including during the GFC. We've entered new territory, to say the least.



Source: Barclays Research, FDIC.

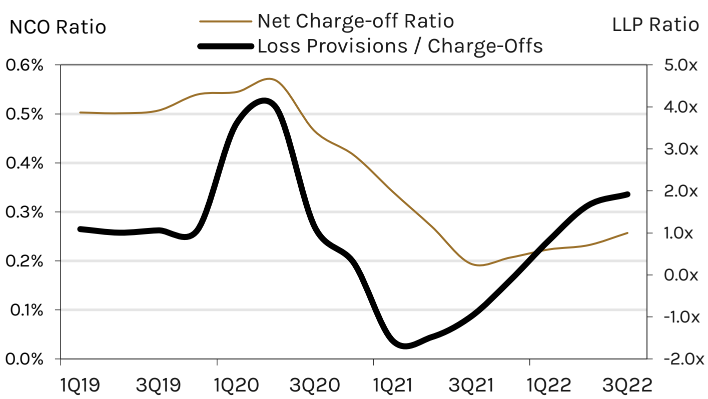
The vast majority of these AOCIs are arising from losses related to mortgages and mortgage origination. More losses are expected when 4Q22 numbers are reported, all of which have a direct impact on bank capital.

Wells Fargo just [announced]() a significant pullback in their mortgage origination business. No doubt that decision is at least partly related to the AOCI losses that business has caused in 2022, in addition to other challenges associated with operating a large mortgage platform.

Third, banks are having to increase loss reserves, especially current expected credit loss ("CECL") reserves. Prior to the pandemic, regulators changed the methodology by which CECL reserves were calculated. Previously, banks reserved based on a relatively near term outlook for losses using a long run historical average approach.

The recent changes to CECL now require banks to *project lifetime losses* in a book of business (refreshed periodically) and to then reserve for all of those losses up front. The impact of the change was mild given projected losses were low in the recovering economy of 2021. Today projected losses are much higher, forcing banks to increase their loss reserves.

U.S. Banks: Loan Loss Reserves vs. Charge-Offs

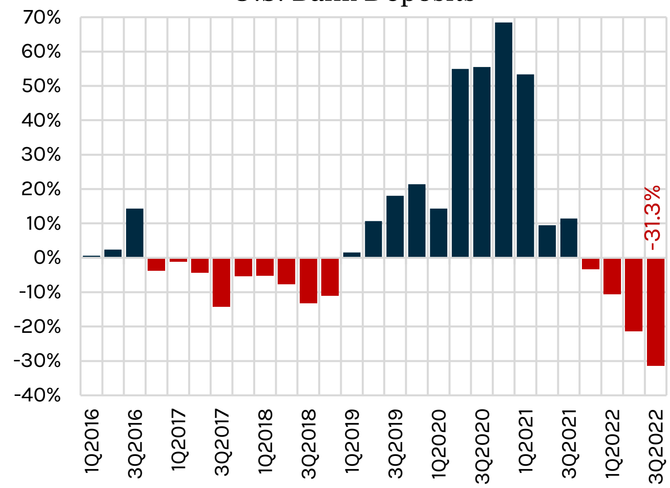


Source: Barclays Research, FDIC.

The chart above shows the significant swing in loss provisioning that has occurred at banks since 2021. Banks are building a stockpile of reserves ahead of the coming credit cycle. The reason reserves are being amassed earlier than they historically would have is due primarily to CECL.

Fourth, deposits are down. We have spoken to banks which are seeing 30%+ drops in deposit balances. One investor wondered, "Why don't banks just increase the rates they are paying to attract depositors?" The short answer is: they are, but it's not helping much. Deposits are down because the excess savings that households enjoyed last year is being consumed by spending in an inflationary environment.

YoY Change in Deposits
U.S. Bank Deposits



Source: FDIC.

So imagine you are a bank executive right now. Capital requirements and loss reserves are higher and deposits are down. What do you do to meet those higher capital requirements? You are forced to hoard capital by pulling back from lending and by shrinking your balance sheet through asset sales. That's the **primary** effect – and it's happening now.

We think the **secondary** effect is far more consequential. One of the reasons the economic shock of a global pandemic did not result in a traditional credit cycle is because credit did not contract. Instead, credit *expanded*… and with that expansion came a host of insidious and unintended consequences, including inflation and *trillions* in new sovereign and other public debt.

Monetary and regulatory policies today are aimed at credit *contraction*. Credit contraction in the context of liquidity shocks or stresses is all you need to usher in a recession and default cycle which, in turn, tends to exacerbate liquidity and credit constraints.

Jamie Dimon summed this up very well in his testimony to U.S. legislators back in September.

> *"This is bad for America, as it handicaps regulated banks at precisely the wrong time, causing them to be* ***capital*** *constrained and reduce growth in areas like lending, as the country enters difficult economic conditions."*

We also find it notable that credit contraction is occurring *in advance of* the expected default cycle. That is unusual. In the last several default cycles, credit contracted *after* the onset of defaults and losses.

This cycle is likely to behave differently as a result of capital constraints already in place. We therefore think these **secondary** effects will contribute to longer lasting windows of opportunity for alternative credit.

> "We expect capital gaps to emerge within private, illiquid strategies as a direct result of this "denominator effect."

PENSION LIQUIDITY AND CAPITAL

Let's start with an evaluation of the capital implications of U.K. pension funds forced to liquidate assets due to liability driven investing ("LDI") programs. Repeatedly in these pages we have pointed to the inherent risks associated with mark-to-market leverage and the liquidity shocks that can arise from the associated margin calls.

The underlying events that roiled U.K., European and U.S. markets are the latest examples of the dangers and consequences of becoming a forced seller. For all its aspirational promises to manufacture duration using interest rate derivatives (a mark-to-market instrument with implicit leverage), last quarter's collapse in gilt prices forced many U.K. corporate defined benefit pension schemes to face large margin calls associated with LDI programs, especially of the leveraged variety.

LDI grew in popularity in a stubbornly low interest rate regime. The regulatory architecture of the U.K. corporate pension system fundamentally changed following a series of pension fund scandals involving companies under Robert Maxwell's control in the early 1990s. This led to a focus on the solvency of pension funds with liquidity acting as a secondary measure.

The general approach to LDI plans consists of minimizing and managing liability risk followed by generating asset returns. LDI involves using derivatives like interest rate swaps ostensibly to hedge, but more often as a tool for manufacturing long duration assets to match a pension's long duration liabilities.

The bulk of this hedging happened post-2008 where LDI delivered as advertised in a low and stable interest rate environment. In a world of quantitative easing, the appropriateness of leveraged exposure was seldomly questioned; in fact, the approach gained popularity among asset managers who created commingled funds and other LDI-oriented products for pension clients.

Then, suddenly and presumably also unexpectedly, chaos ensued as long gilt prices fell and yields rose. LDI fund managers were hit by nominally huge margin calls on their LDI-based derivatives books from their bank counterparties. Corporate defined benefit pension funds were suddenly forced to liquidate assets.

Naturally, they looked first to their most liquid assets, sending those prices lower. This, in turn, triggered new rounds of margin calls – sometimes only hours apart. This vicious cycle led to an effective "run on the pension funds'" investment portfolios. The Bank of England was forced to intervene with a new bout of quantitative easing to avert a "material risk to U.K. financial stability."

We've already seen the **primary** impact from this event: the forced sale of assets which not only crystalized losses in pension funds' portfolios but also presented an opportunity for certain institutional investors to buy what the pensions were selling at discounted prices. Liquidity events like this almost always have that kind of immediate impact.

Of even greater interest to us, however, is the **secondary**, longer term impact. As the dust settles from the forced sale of liquid assets, pension CIOs and risk allocators face a new dilemma: their portfolios may now be overweight illiquid assets, even as they also need to fill a capital hole created by large, realized losses.

It's therefore likely that capital these pensions would have otherwise allocated to illiquid strategies in 2023 will instead be redirected to liquid strategies – especially those with capital appreciation potential. Think of that like a redirection of new capital away from strategies like private equity and private credit. These investors are calling it "the denominator effect," and it's real.

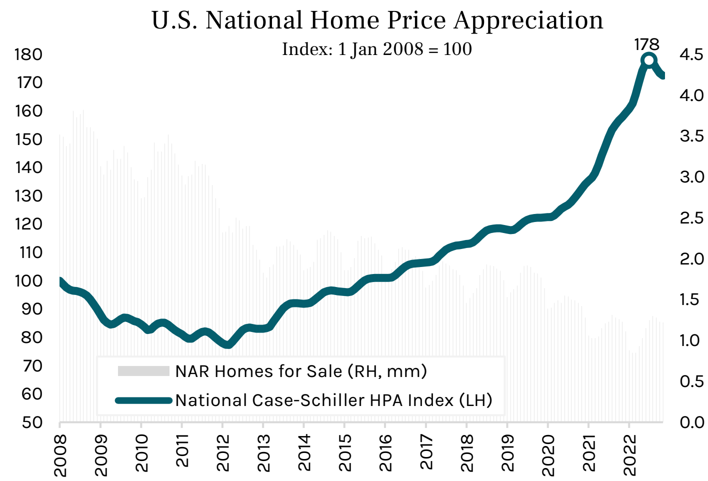
Lesson #7 on our team's Top 15 *Lessons Learned* is **"Watch the flows"** – which is *exactly* the point here. We expect capital gaps to emerge within private, illiquid strategies as a direct result of this "denominator effect."

Whether it's pensions, banks or households – the common theme is liquidity and capital stresses. These factors produce both primary and secondary impacts on capital. We expect the **primary** or immediate impacts will present very interesting but short-lived opportunities for alternative credit.

That said, we are far more focused on the longer term **secondary** impacts on capital that traditional markets are often poorly equipped to address. We think they point to a much bigger window of opportunity on the horizon that will, almost certainly, begin to fill these pages.

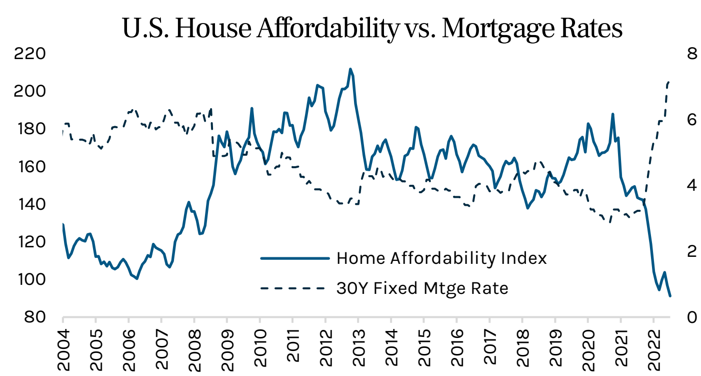
Home Prices Are Headed Lower

Over the last several years, almost everywhere you looked, housing experienced value appreciation. As the chart below shows, U.S. home prices have been rising steadily since 2012; home price appreciation ("HPA") accelerated during the pandemic due to new demand for homes, extraordinarily low mortgage rates and constrained supply.



Source: Bloomberg.

That trend is quickly reversing as illustrated in the chart below. This is largely due to deteriorating affordability given current mortgage rates more than double where they were one year ago. Consequently, affordability has fallen materially with average 30-year conforming mortgage rates at 6.6%, leading to a slowdown in sales velocity.



Source: National Association of Realtors, www.nar.realtor.

Some will argue that home supply shortages and low vacancy rates continue to bode well for HPA. As recently as July, housing research experts were calling for HPA up +10% in 2023, despite problematic affordability and high mortgage rates; they've since completely changed their tune.

At the time they pointed to continued housing shortages (generally tied to underinvestment in new housing stock since the GFC) and persistently low vacancy rates. We find those arguments perhaps compelling in the long term, but in the near term and foreseeable future, we think negative HPA is very much in play.

> "Housing experts in the U.S. are quick to point out that there's a structural shortage of housing. That will not be solved easily in a high rate, higher inflation environment."

Housing Stress, Yes – But Not Everywhere

We also believe that stress will be experienced unevenly. On page 13, we have included an analysis that identifies specific cohorts that we believe are both the most likely to see negative HPA and most vulnerable to its impacts (e.g., cohorts where we might expect to see higher defaults and repossessions).

For example, those who have owned their home for a long period of time will have generally built substantial equity through mortgage amortization and positive HPA over the last ten years. This should render those homeowners relatively insensitive to negative HPA in the event they need or want to sell their homes.

However, other homeowners who purchased more recently and in regions that had already seen significant HPA are likely to have little equity in their homes. This is a cohort much more at risk of being "underwater" with negative HPA. The analysis on page 13 lays out the degree to which negative HPA affects various cohorts.

The cohorts are organized by year of purchase (or refinancing) and by the three most popular mortgage programs in the U.S.: non-QM, Fannie Mae and Freddie Mac. The resulting statistics are the share of such mortgages that become vulnerable under various negative HPA scenarios (reaching LTVs of 91% or greater).

Clearly, HPA declines of 15% or more are where meaningful stress begins to appear across the board. Due to unprecedented mortgage origination volumes in 2021, that vintage is nominally one of the largest in existence today. The headline almost writes itself.

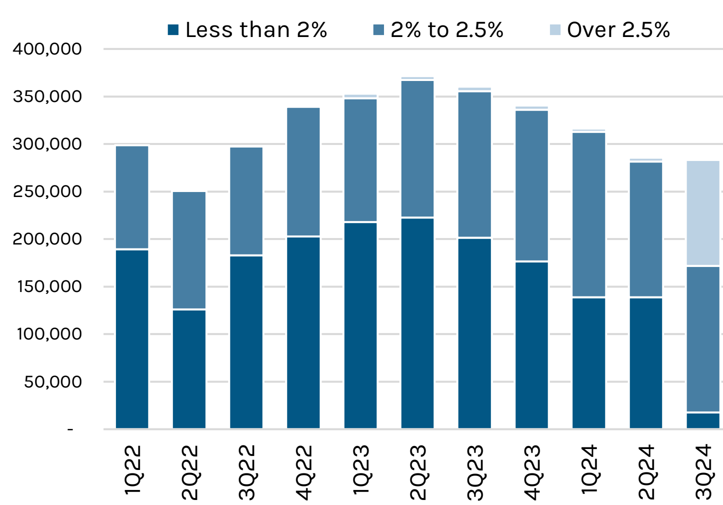
Floating Rate Mortgages Are Another Problem

We think the housing markets in the U.K., Canada and/or Australia are vulnerable. Unlike the U.S. housing market, which is financed almost entirely with long, fixed-rate mortgages, houses in the U.K., Canada and Australia are primarily financed with short and/or floating-rate mortgages.

In fact, because 2021 was such a banner year for U.S. mortgage originations and refinancings, the average mortgage rate dropped from 3.94% in 2019 to 2.96% in 2021, saving the average homeowner hundreds of dollars per month. The vast majority of U.S. homeowners with a mortgage have also locked in those low, fixed rates for the long term.

That picture is very different in the U.K., Canada and Australia. For example, in the U.K., **nearly half** of outstanding mortgages will see their base rate "reset" to a higher level within the next 12 months.

Number of UK Mortgages Re-Fixing



Source: Bank of England.

The preceding chart shows the number of fixed-rate U.K. mortgages that will face a new, higher mortgage rate on the date shown… it also shows the interest rates these homeowners are now paying.

The resulting average mortgage payments are anticipated to **double** (sources: Resolution Foundation, BofA). That increase in the cost of housing is not yet reflected in the inflation rate already afflicting U.K. consumers. While there are many who believe that elevated interest and mortgage rates will be "transitory," during many periods in history the self-fulfilling doom loop of higher inflation-rates-wages led to sustained high levels of all three factors for many years.

The implications on housing (home prices for starters) and capital are relatively obvious. Housing experts in the U.S. are quick to point out that there is a structural shortage of housing. That will not be easily solved in a high rate, higher inflation environment.

We've Seen the Future and It's Hairy

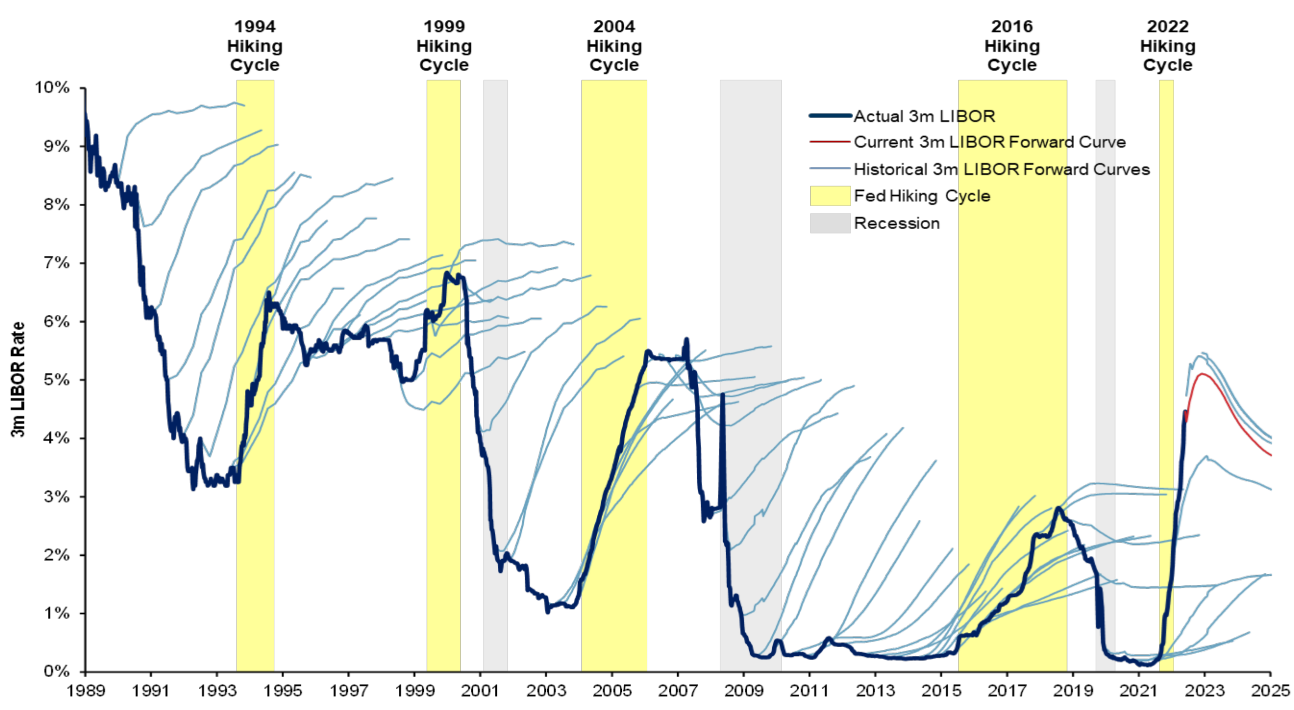
Forward rates (*for the layperson: the market's expectation of future interest rates*) are the basis for pricing just about every fixed income security in existence. Because they are so foundational, investors are inclined to reference them in articulating their own expectations for future interest rates. Why be contrarian when trillions in assets are valued by forward rates that are also rendered essentially arbitrage free by rates derivatives traders every day?

And yet – *and yet* – there are few markets that are so consistently and continuously wrong as the forward rates markets. One of our favorite graphs is nicknamed the "**Hair Graph"** (below). In essence, it overlays and compares *actual* rates to *forward* rates. The "hairs" in this graph are the forward rates. The metaphor is on point.

If forward rates were weather forecasts, we would be dressed wrong all year. There is a clear bias to them: forward rates almost always over-project future rates. Forward rates are wrong so often that one has to wonder in those rare cases where the forward rate "got it right" whether it's pure coincidence, like a broken clock being right twice per day.

So how seriously should we take *today's* forward rates that suggest lower rates around the corner? Are forward rates to be disbelieved, and if so, what does this suggest for fixed vs. floating allocations?

The "Hair Graph"



Source: GS Internal as of Nov-2022
Note: Past Performance is not indicative of future results. For illustrative purposes only.

This brings us to an observation which has not yet graduated to become one of our team's *Lessons Learned*: *One of the greatest sources of mispricing and inefficiencies in the market is investors' inability to imagine a scenario outside of their own experience or current market indicators.*

We saw that adage play out this past year among the chorus of voices who couldn't imagine inflation would be a serious issue.

Forward rates, in that context, are like mental magnets, pulling expectations together into groupthink. Ask most people where they think rates will be in a year or two – very high likelihood you'll hear something that reflects the forward markets.

Predicting the future is hairy business; we prefer to evaluate investments on an absolute yield basis, irrespective of forward rates, in order to inoculate our thinking about relative value from implicit rates bets built into forward curves.

We have also learned that some of the best opportunities appear when the market is highly correlated to certain expectations… and then something very different happens.

Imagine what might happen should inflation and rates remain elevated for longer than the market expects. Paradigm shifts can trigger significant volatility as modeling assumptions are changed, often overnight, to comport with reality. We have already seen some of this with respect to inflation – we are convinced there is more to come.

Super Bowl Advertisers

On a lighter note, years ago we used to joke on the team about how being featured positively on the cover of *Bloomberg Magazine* was possibly an omen. For a while there, it was a reliable leading indicator of a near term fall from grace.

We think we may have found a better one: Superbowl advertisers. The following table shows the stock performance of advertisers following last year's Superbowl. For the record, we don't blame the NFL :)

Company	Performance since February 13, 2022
FTX*	-99%
Vroom Inc (VRM)	-85%
Coinbase Global Inc (COIN)	-82%
DraftKings Inc (DKNG)	-51%
Meta Platforms Inc (META)	-45%
Rocket Companies Inc (RKT)	-43%
Salesforce Inc (CRM)	-36%
Uber Technologies Inc (UBER)	-30%
General Motors Co (GM)	-31%
S&P 500	-13%

Source: Bloomberg, *SWAG.

The Path Forward

Looking ahead, it seems obvious to us that the primary and secondary impacts from liquidity and capital stresses that happened during 2022 will usher in a new season, a new climate in which to invest. *Spring is coming*. There will still be episodic volatility and plenty of headlines to be written in 2023 and beyond about corporate earnings, downgrades and defaults… but the planting season is indeed upon us.

Good farmers know when the soil is ready. They know based on conditions and forecasts what to plant and when. Good farmers also know how to manage and cultivate their crops to improve quality and maximize yield. They also know when it is time to harvest – avoiding the temptation to delay and thereby risk the crop for marginally more yield. Credit investing is strikingly similar. Credit investors, like farmers, are a different breed.

We have been accused of being "too bearish" in the past; it is an accusation we wear today with honor. The staggering market losses of 2022 in both public equities and traditional fixed income truly were different. It was the biggest annual loss in bonds going back to the Great Depression. It was the seventh worst year in equities measured by the S&P 500 since 1928.

This year is setting up to be a particularly good investing or planting environment… but what you plant is going to be the hardest decision as an investor. Some big shifts in the market are going to start playing out over the next several years. There is a high potential for tectonic shifts in allocation policies among pension, insurance, banking, retail, sovereign wealth and other investors… all from the impacts of 2022.

Investors globally will be looking to both recover from 2022's market losses while also avoiding going through that kind of pain again. Given the sheer size of equity and fixed income markets, any shifts away will likely have significant impacts on the asset classes into which this capital "flows."

We think that while true relative value investing is always paramount, it will be especially critical this year. In a world of volatility and shifting allocations, some subsectors are likely to become unusually compelling while others are rendered almost uninvestable. **That, in our opinion, will be the primary challenge of 2023**.

The ability to directly originate opportunities and be a "maker" vs. a "taker" in this market will be important… but not as important as flexibility, especially intellectual flexibility to navigate a changing environment.

For example, at the end of December we discussed with our team that 2023 was setting up to be a good investing environment, even as we are still expecting a recession and default cycle. We emphasized the importance of diligently watching capital flows. On that basis, January was setting up for a rally. When you have even a little bit of demand and almost no supply, spreads can tighten very quickly in the asset-backed securities markets.

That does not mean that such a rally will continue in the face of mounting weakness in jobs, economics and a developing credit cycle. It does, however, speak to how quickly relative value may shift from one asset class to another, as the market seeks equilibrium amid misaligned supply and demand for capital.

Astute investors can vastly improve their outcomes by 1) their ability to invest tactically into the right environment, 2) focusing on the most appropriate form of security given the environment, 3) targeting sectors offering the best relative value and 4) underwriting with intensive and complete due diligence. The key is to never lose focus on any one of these parts, and to never stop asking the "why" questions.

Joel remembers his first performance review in his first job out of college. His boss said some very nice things, but then said something that stuck with him, "*I don't believe that you can really teach credit. I believe you are born with credit instincts*." He did not fully appreciate what that meant at the time. Now, 25 years later, with the experiences and scars that come from 25 years of credit investing, he fully appreciates and agrees with it today.

Credit investors operate with a streak of paranoia. They assume that they are missing some key piece of information. Fear, more typically than not, drives them to scrutinize risks (real or imagined), and think through probabilities and potential mitigants *ad nauseam*.

Why? Because credit investors are never measured by their wins, only by their losses. If you are too bearish as a credit investor, your downside is largely opportunity cost, arising from being under-allocated – *not a big problem*. If you are too bullish, your downside is real losses, arising from being over-risked – *potentially a very big problem*.

Credit investors talk about asymmetric risk in their investments: limited upside, lots of downside. In many other investing disciplines (e.g., venture capital and even in PE), you can survive a few wipeouts and still have a decent track record. Not so much in credit. In credit, your annualized loss rate, as measured by realized losses (defaults **and** recoveries), is the true measure of a credit investor.

We have stated in earlier newsletters that our motto for our group is "*Kaizen investing with purpose*." We always use these pages to speak to our own *kaizen* process (continuous improvement) and some of our observations tied to that process. Additionally, we have shared at the end of every one of our newsletters a profile of a global health or global education charity that our team is evaluating with respect to our flagship funds' "pledge for good."

In December 2022, we were able to take nine members of the Alternative Credit Team to India to conduct due diligence and to improve our relative value assessment on six different global health and education charities. Meetings took place onsite in Mumbai and New Delhi. The work being done by these charities was truly amazing to see in person. Even more inspiring was to see how much impact we can have in both global health and global education.

It was also daunting. Similar to investing, we are taking a relative value approach to complete our diligence on various charitable organizations and decide where we can have the most impact and be a catalyst for long term improvements.

A lot of great work is being done by many global health and education charities across the globe. It is not so much a matter of discovering new solutions, rather it is a matter of finding capital in order to scale the impact. We strive to find those charities and projects that can manifest the best relative impact.

Our trip to India left us both humbled by the work being done by these organizations and grateful to all of our investors. It was a good reminder of how great our jobs are… but also how grateful we are for our investors, without whom we wouldn't be able to do something we love as investors and fiduciaries, and to also have a charitable impact through that work.

A third party coined it recently as "*doing good by being good.*" The better our performance as investors, the bigger the impact we can have. Connecting what we love to do with such a purpose is humbling and motivating.

Thank you to our investors for investing with us and thereby helping to support this model of charitable giving. Our dream is to see this approach propagated widely to other funds and businesses. Imagine the collective impact we could have!

The Ares Alternative Credit Team

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How to read the tables below:

For each category of mortgage (e.g., non-QM, Freddie, Fannie), there are four stress scenarios showing increasing drops in home values (from 5% to 20%). This HPA drop is then overlayed upon one of four vintages reflecting when the mortgage was originated (e.g., 2019, 2020, 2021 and 2022). The results in each table show the percentage of all mortgages that we would consider "vulnerable" because the resulting loan-to-value is over 90% (either between 91% and 100%, or over 100%).

Non-QM: Non-agency mortgages, generally prime borrowers and 70% fully documented and underwritten

HPA 5% down			HPA 10% down			HPA 15% down			HPA 20% down		
Vintage	91-100	> 100	Vintage	91-100	> 100	Vintage	91-100	> 100	Vintage	91-100	> 100
2019	1.0%	0.5%	2019	2.0%	0.6%	2019	5.6%	1.5%	2019	9.0%	2.6%
2020	2.6%	0.7%	2020	4.6%	0.9%	2020	12.6%	3.3%	2020	19.4%	5.8%
2021	1.7%	0.9%	2021	3.8%	1.1%	2021	12.7%	2.6%	2021	22.9%	5.1%
2022	2.3%	1.9%	2022	5.6%	2.2%	2022	15.2%	4.2%	2022	26.9%	8.5%

Freddie Mac: Agency mortgages, originated and underwritten to Freddie Mac guidelines

HPA 5% down			HPA 10% down			HPA 15% down			HPA 20% down		
Vintage	91-100	> 100	Vintage	91-100	> 100	Vintage	91-100	> 100	Vintage	91-100	> 100
2019	0.1%	0.0%	2019	0.1%	0.1%	2019	0.3%	0.1%	2019	0.6%	0.2%
2020	0.1%	0.1%	2020	0.3%	0.1%	2020	0.7%	0.2%	2020	1.7%	0.4%
2021	0.2%	0.1%	2021	0.5%	0.1%	2021	1.7%	0.3%	2021	4.1%	0.7%
2022	6.6%	1.6%	2022	6.7%	4.8%	2022	11.6%	8.2%	2022	17.0%	12.6%

Fannie Mae: Agency mortgages, originated and underwritten to Fannie Mae guidelines

HPA 5% down			HPA 10% down			HPA 15% down			HPA 20% down		
Vintage	91-100	> 100	Vintage	91-100	> 100	Vintage	91-100	> 100	Vintage	91-100	> 100
2019	0.0%	0.0%	2019	0.1%	0.1%	2019	0.2%	0.1%	2019	0.6%	0.1%
2020	0.0%	0.0%	2020	0.1%	0.0%	2020	0.4%	0.0%	2020	1.8%	0.2%
2021	0.0%	0.0%	2021	0.0%	0.0%	2021	0.9%	0.0%	2021	4.9%	0.1%
2022	0.4%	0.0%	2022	3.9%	0.0%	2022	10.5%	0.6%	2022	14.2%	5.5%

Source: Bank of America Research.

Charity Spotlight of the Quarter

Khan Academy

Ares is committed to investing in global health and education to help save lives and drive equality. Ares and the Ares Alternative Credit Team's (the "Team") portfolio managers have committed to donate a portion of carried interest profits for certain of the Team's flagship funds to global health and education charities. Given Ares' focus on investing with purpose, each quarter we will highlight a non-profit organization with a track record of delivering value per charitable dollar contributed. Note Ares is not endorsing the non-profit organization, nor has Ares donated to the highlighted charity at the time of this publication.

Before turning to our charity spotlight, we'd like to share an exciting milestone in our Team's work related to our flagship funds' pledge for good.

In December 2022, nine members of the Team travelled to Mumbai and Delhi in India for the Team's first annual global charity diligence trip. We met with the following six charities:

- Akanksha
- Evidence Action
- Max Foundation
- PATH Global
- Pratham
- Udayan Care

The objectives of this trip and subsequent trips are to conduct preliminary diligence on a sampling of health and global education charities operating in the developing world and to provide members of the team with firsthand exposure to the work these charities do.

The charities we met with spanned health and education, and within each category featured different operating models and methods. With Akanksha, Pratham, and PATH, we visited their programming on the ground, which were incredibly impactful experiences.

In the spirit of the education theme of this quarter's charity spotlight, we'll share some of our experiences with **two** of the education charities with whom we spent time in the field in Mumbai.

Pratham

On Day One, we traveled to a low income housing society in the Chembur area of Mumbai, where we sat in a small common room and observed a remedial numeracy and literacy class conducted by Pratham for elementary school age children of that housing society. We spent time with the students, as well as their parents and the program administrators, discussing a particular program wherein Pratham conducts door-to-door surveys of communities to identify children who may need additional programming beyond school.

Pratham's interventions ensure that regardless of what grade a child is in, the child is able to master key numeracy and literacy skills according to a standardized curriculum that is asynchronous with schools. Due to the common inadequacy of government and certain low-cost private schools, parents may not be aware that their children are falling behind in basic skills. The parents we met with credited Pratham with filling the gaps in their children's basic skills, but also providing the parents themselves with an understanding of what skills their children should have at each age. This has the derivative effect of spurring parents to hold their schoolteachers and administrators more accountable for the learning their children receive during school.

Akanksha

On Day Two, we visited a charter school in the Khar area of Mumbai operated by Akanksha. Akanksha operates a network of almost thirty kindergarten-to-high school charter schools in Mumbai, Pune, and Nagpur. We were given a tour of the school and each of the grades by the students themselves, who highlighted the various subjects they learned, followed by a debriefing session with administrators and alumni of Akanksha-run schools.

When we entered the school building, we were initially confused because the name displayed outside was not what we were told. The answer to our confusion lay in Akanksha's model that bears some similarities to charter schools in the U.S. Given declining enrollment in government schools, Akanksha is able to repurpose unutilized space in government schools to run its own schools. The Akanksha school we visited initially began in that government school building by operating a few elementary grades. Each year the school expands to an extra classroom for an extra grade to keep up with students' progression.

The alumni we met with were representative of the success of Akanksha's impact, with all of them going on to attend an English-medium college and following paths that they credited their time at Akanksha with helping them pursue.

As we often say in our investing roles, investing is pattern recognition, and so too is our charity diligence. Within the span of our week-long trip, we were able to identify common themes across the various charities.

For example, we noticed that a key asset each of the education charities had (not just Pratham and Akanksha), was a devoted alumni base that the charities rely on to mentor and support the current generation of students, like a multiplier effect. Alumni were clearly very cognizant of the impact of the charities we met with and their greater purpose.

As another example, across both health and education, we saw many areas of inadequacy in the public sector in providing quality education and medical care. However, we also understood that in many cases, the charities do not work adverse to government projects; rather, they often partner. Akanksha's charter school model is supported by the government, and Akanksha is working on figuring out how to "franchise" their methodologies into government schools not operated by them. PATH's medical programs are likewise incubated by PATH and once they are executed, PATH hands the programs off to the government to continue managing.

Most of the travelling group hadn't been to India before, but even those that had all agreed that this was an incredibly impactful trip from an emotional perspective. As one member of our team said, *"I look forward to following up with these charities both through Alt Credit's charitable contribution program, but also personally"*

Below are a few pictures of our team on the ground in Mumbai and Delhi:

Now onto our spotlight!

This quarter, we're spotlighting **Khan Academy**, an organization well-known to many of us who went through grade school and college in the past fifteen years. We're highlighting Khan Academy now to showcase the organization's breadth, as it operates programming in substantially every country around the globe and across 50+ languages.

HISTORY

His success tutoring his cousin remotely led to Salman "Sal" Khan being asked to help other friends and family with their classwork. A few years later, Sal incorporated what became Khan Academy as a nonprofit and received grants from Google and the Gates Foundation to build Khan Academy.

As of 2021, Khan Academy provides multilingual education content globally and has 140 million registered users spending 8 billion minutes of time annually learning online. Khan Academy's global impact was accelerated during the COVID-19 pandemic as schools worldwide closed. This especially had an impact on students who may not have had the means to replace what they were learning in school or needed additional help.

IMPACT

Khan Academy's efforts focus broadly on two complementary initiatives. The first, which is what most of us who have used Khan Academy are familiar with, is the production of educational lessons following a structure that emphasizes mastery of concepts sequentially, independent of any school curriculum. Khan Academy's subjects range from math and science to foreign languages and test prep.

The second, which may be less familiar to U.S. readers, is an effort in several countries to work with local governments and public school systems to supplement in-school learning, using teams that are located in those countries. Though the majority of Khan Academy's usage is organic, the organization is focused on growing partnerships to drive increased adoption.

Currently, in India, Brazil, and Peru, Khan Academy's partnership model has the following key features:

1. Tools for teachers to help students master material while having classes of students learning at different paces;
2. Providing quality video content to supplement teachers' materials;
3. Teacher training to help teachers best leverage Khan Academy's resources; and
4. Using government's scale to conduct educational interventions in a financially efficient manner.

Khan Academy works with ~1.5 million students in India, Brazil, and Peru. Across all geographies, Khan Academy's programs have been demonstrated to drive material improvements in children's learning. For example, one study in Brazil showed that students using Khan Academy had a 10-percentage point increase in math scores relative to students in a traditional program.

"I am in my 14th year teaching high school math. I started using Khan Academy as a study technique with my students who were having trouble in various classes. This year, however, Khan Academy saved me from countless hours of work when we shifted to distance learning amid the COVID-19 crisis. I've been doing all of my assignments with my ESE high school students on Khan Academy! Their English teacher got wind of what I was doing, and she started using Khan Academy for her assignments, as well . . . So, from me and my students, thank you for this website and all the work you put into it to make it easier on teachers like me during this difficult time in our world's history! My students have also commented that they had fun earning points and badges, and even students with As are doing the extra credit assignments I put in for this last week of school because it's fun!"

Katherine Croakman
Teacher

KEY STATISTICS

- # Countries: **190**
- # Languages: **50+**
- # Users: **140 million**
- New Users Per Month: **13 million**
- Increase in expected learning after using Khan Academy for 30+ minutes / week: **2x+**

KEY FINANCIAL STATISTICS (2020)

- Khan Academy raised $82 million of revenue, of which 64% ($53 million) came from foundations and 15% ($12 million) was generated via earned income
- Total expenditures were $59 million, of which 12% ($7 million) was spent on G&A expenses

Q&A WITH ARES

Q: What is Khan Academy's biggest need right now?

A: Khan Academy needs unrestricted funds to grow in new markets (beyond its in-place development efforts in Brazil, India, and Peru, which were driven by earlier donor mandates). Beyond geographic expansion, Khan Academy also needs to focus on (i) building support for right-to-left languages (i.e., Arabic, Hebrew, Urdu), (ii) building mobile apps, and (iii) figuring out how to push the right content to users.

Q: What is Khan Academy's key KPI?

A: Time spent on the platform. Khan Academy

regular users. These metrics spiked during the pandemic because schools were unprepared for

measures monthly very active users ("MAVU") and yearly very active users ("YAVU"), both as metrics of regular users.

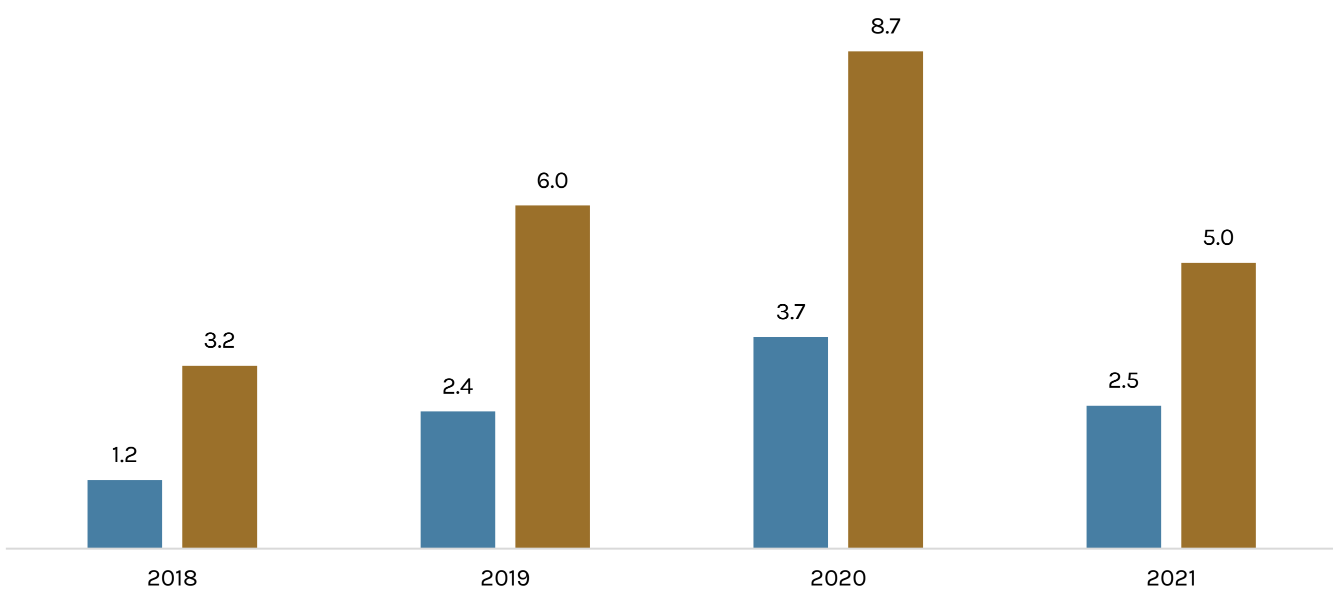
Q: How does Khan Academy ensure consistent quality given content is produced by many people, not just Sal?

A: All quality control is done in house to ensure that all content follows Khan Academy's pedagogy and is of a similar quality, regardless of subject and language of instruction.

FOR ADDITIONAL INFORMATION, PLEASE VISIT [WWW.KHANACADEMY.ORG](http://www.khanacademy.org)

remote learning and Khan Academy became highly valuable.

Khan Academy MAVUs



Source: Khan Academy.

Endnotes

[1] Ares market observations.

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The outbreak of a novel and highly contagious form of coronavirus ("COVID-19"), which the World Health Organization has declared to constitute a pandemic, has resulted in numerous deaths, adversely impacted global commercial activity and contributed to significant volatility in certain equity and debt markets. The global impact of the outbreak is rapidly evolving, and many countries have reacted by instituting quarantines, prohibitions on travel and the closure of offices, businesses, schools, retail stores and other public venues. Businesses are also implementing similar precautionary measures. Such measures, as well as the general uncertainty surrounding the dangers and impact of COVID-19, are creating significant disruption in supply chains and economic activity and are having a particularly adverse impact on energy, transportation, hospitality, tourism, entertainment and other industries. The impact of COVID-19 has led to significant volatility and declines in the global financial markets and oil prices and it is uncertain how long this volatility will continue. As COVID-19 continues to spread, the potential impacts, including a global, regional or other economic recession, are increasingly uncertain and difficult to assess. Any public health emergency, including any outbreak of COVID-19 or other existing or new epidemic diseases, or the threat thereof, and the resulting financial and economic market uncertainty could have a significant adverse impact on the funds, the value of their investments and their portfolio companies. The information herein is as of the dates referenced, and not all of the effects, directly or indirectly, resulting from COVID-19 and/or the current market environment may be reflected herein. The full impact of COVID-19 and its ultimate potential effects on portfolio company performance and valuations is particularly uncertain and difficult to predict.

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REF: TCA-01060