



Credit Risk Quarterly with 2OS

Q1 2022 in Review: Inflation & BNPL Focus

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Executive Summary

2nd Order Solutions has continued to see a rising tide of consumer borrowing in Q1 2022, with February 2022 seeing the highest credit issued on record. The concentration of this newly issued credit has leaned subprime, consistent with the increasing percentage of subprime lending beginning in Q3 2020.

This review covers some of the recent trends and risk indicators and focuses on three main areas of primary importance to lenders:

Subprime delinquencies continue to tick up:

- Although overall delinquencies remain at pre-pandemic lows, we see a continuation of the gradual uptick we observed in our previous paper. This uptick can be attributed to increasing subprime concentration, heightened risk in more recent vintages, and risk score inflation.

Leveraging BNPL data for credit risk:

- Buy Now Pay Later (BNPL) products are continuing a fast upward rise in usage and concentration in the market. Unfortunately, these trades are not fully reported to the bureau yet – as such, the risk of these customers is not fully captured.
- This is leading to some muted risk signal among BNPL customers, as in-good-standing BNPL customers aren't getting credited for that performance while BNPL customers that go delinquent aren't seeing any impact to their overarching credit profile. In this paper, we share some initial work and insights on how to leverage BNPL tradeline data and how it would impact your risk scores.

How the surge in inflation is impacting lending:

- Inflation is disproportionately impacting lower income customers; a significant portion are facing severe financial hardship. The additional payment pressure and loss of disposable income is leading to an increase in risk and distributional changes in the portfolio for customers with a tightened monthly cash flow.
- Although the charge-offs in Auto Loans have risen recently, the severity continues to go down due to the inflation of underlying asset prices. The rising prices are leading to both increase in recoveries and change in customer payment hierarchy. Going forward, it will be very important for lenders to price in these changes.

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Overall State of Credit

Before we dive in to the current state of credit, it's worth going over how the trends and insights from our January whitepaper are holding up:

<u>Q4 2021 Insight</u>	<u>State of the Insight (Q1 2022)</u>
Overall delinquency trends are flat but we are starting to see an uptick in more recent vintages	The risk uptick in recent vintages has now started showing up on the full book and we can see a rise in overall delinquencies too; see Exhibit 2 for more details.
Student loan deferrals are somewhat muting the 'real' risk of young borrowers, leading to higher originations and credit expansion as students face lowered payment burden	We continue to see a rise of originations with a low credit age, which continues to support a higher concentration of younger borrowers, as seen in Exhibit A4 .
There has been a marked increase in subprime concentration among newly booked accounts	The upward trend of customers with lower FICO scores making up a bigger share of the originations is still holding up. We do see a slight reversion, but it's too early to establish significance (Exhibit 1)

In the aftermath of COVID-19, we have seen ample evidence that lenders have returned to pre-pandemic lending standards, and many trends we identified in previous months have continued their push in Q1. Consumer borrowing surged in February 2022 by the most on record, with nearly \$42 billion in revolving and non-revolving credit – meaning credit cards & auto/student loans, respectively.¹ (**Exhibits A2, A3 & A4** in the appendix)

This jump has featured a large subprime lean, supercharged by score inflation and credit loosening, where lenders are catching up on their tightened originations from earlier on in the pandemic. Our insights from January remain salient with 3 more months of performance data to back them up.

¹ <https://www.bloomberg.com/news/articles/2022-04-07/consumer-borrowing-in-u-s-surges-by-a-record-41-8-billion>

Overall State of Credit

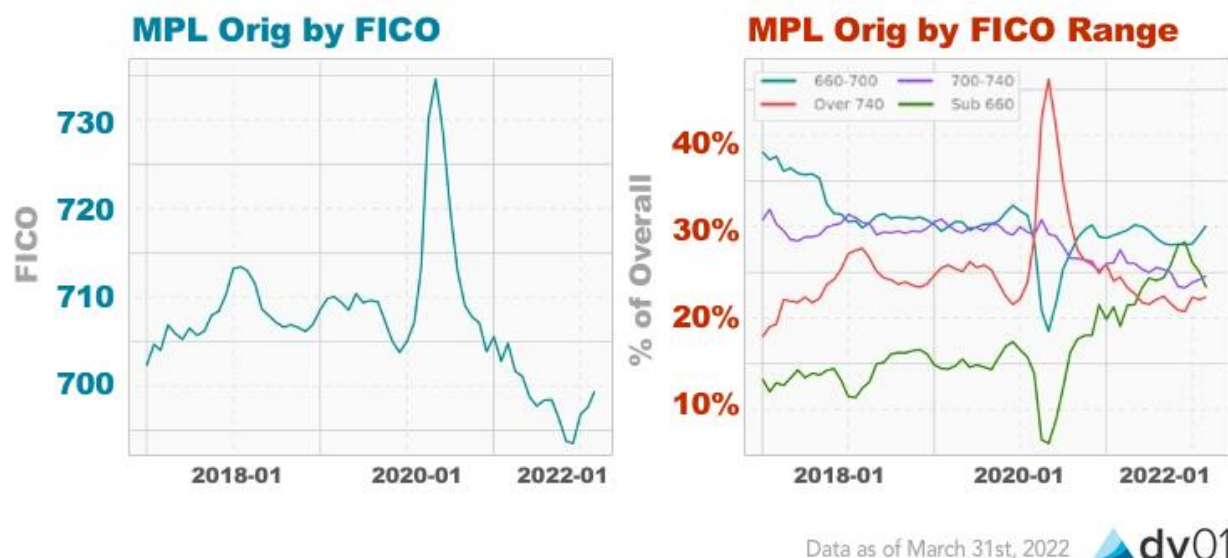


Exhibit 1 Average FICO continues to be low with an increase in concentration of subprime originations. We are starting to see a small reversion – sub 660 FICO are starting to decrease while the 660-700 FICO showed the largest MoM increase.²

As Exhibit 1 demonstrates, we have seen a recent uptick in delinquencies, especially in newer vintages, although they remain near the COVID low. Our expectation for delinquencies would be that this uptick will translate to normalized “non-COVID” risk later on in the lifecycle. As new originations have not matured enough to charge off, we expect that true delinquencies are lagging the actual risk of newer vintages, as the specific accounts booked are slightly more risky due to COVID-19 driven score inflation. Additionally, inflation of the U.S. dollar is leading to significant payment pressure for subprime customers; we will detail this more thoroughly from page 9 onwards.

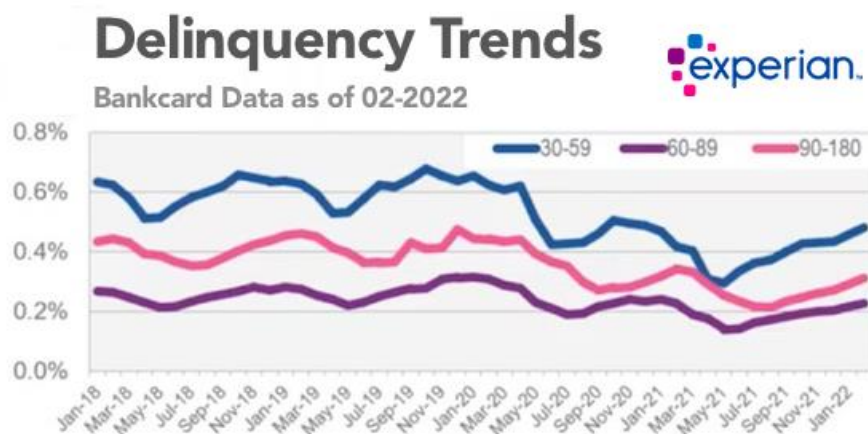


Exhibit 2 Overall delinquencies are still below pre-pandemic lows but there is an uptick in risk. Experian data as of 02-2022

² dv01 aggregates data from leading U.S. online lenders in the consumer unsecured space
<https://www.dv01.co/resources/research/loan-origination-report-vol-12/>

Overall State of Credit

In regards to the inflation of scores, we expect signals to remain muted on several fronts:

- Student loan deferrals are expected to extend, increasing signal instability issues.³
- Risk of customers with BNPL trades is muted; this is discussed in the next section
- COVID related deferrals and government stimulus remain in last-two-year data.⁴

One major difference from our prior Q1 report is that we are seeing an increase in fraud across the board. Now that the “easy bait” of PPP (Paycheck Protection Program) has dried up, fraudsters are no longer concentrating on PPP and are back to targeting lenders. Real time acquisitions are being targeted more aggressively with ID and Synthetic Fraud increasing, and BNPL lenders with nascent fraud protection are being aggressively targeted as easy money. While fraud performance will not be a featured element in this white paper, we intend to cover this in a subsequent deep-dive white paper on fraud fundamentals and industry trends.

Having established a baseline for the overarching current state of credit, DQs, and score inflation, we are now going to go into more detail on two core themes. First, we’re going to cover Buy Now Pay Later, a rapidly expanding credit vehicle that is causing a number of important second order impacts on the overall credit profile of your customers. After we’ve discussed the impact of BNPL data availability, we’re going to cover what the surge in U.S. inflation represents for lenders and consumers alike, starting with the overarching market and concluding with how the inflation of asset prices can impact the financial picture of asset-backed loans.

³ Our previous Quarterly Report delves into the impact of student loan deferrals; we recommend reading that paper for more details on deferral impacts.

⁴ In addition to student loan deferrals, our previous report features a deep dive on overall risk score inflation and subprime risk. For a copy of the prior report, or any questions on our insights, please reach out to any 20S representative, or the authors of this paper.

Leveraging BNPL data for Credit Risk

Buy Now Pay Later (BNPL) loans are a rapidly growing lending product in the United States, especially among subprime and thin file customers. In the last year, roughly 50MM customers used BNPL products. By comparison, roughly 196MM customers held credit cards at the end of 2021, but only 20MM of those were cards originated in 2021⁵ – due to the short-term nature of BNPL products it is likely that (by count alone) more BNPLs originated in 2021 than credit cards (although it's important to note that card balances still dwarf BNPL balances).

One key contributor to risk score inflation is the mass muting of risk signal from non-captured BNPL trades. As of Q1 2022, BNPL data reporting is still in its infancy, and the data is not universally reported to the “big three” credit bureaus (Equifax, Experian, and Transunion). For the unaware, BNPL trades revolve around purposeful short-term financing tied to buying a specific item, often at low or zero percent interest-rates, allowing consumers to stretch the cost of something like a phone, TV, or computer over multiple months to more easily budget for the purchase. A BNPL trade is often effectively an installment loan (IL), and the concept is highly popular amongst young borrowers, as seen in **Exhibit 3**.⁶ However, BNPL trades manifest quite a bit differently than traditional installment products, owing to the fact that BNPL trades are almost universally orders of magnitude smaller than traditional ILs.

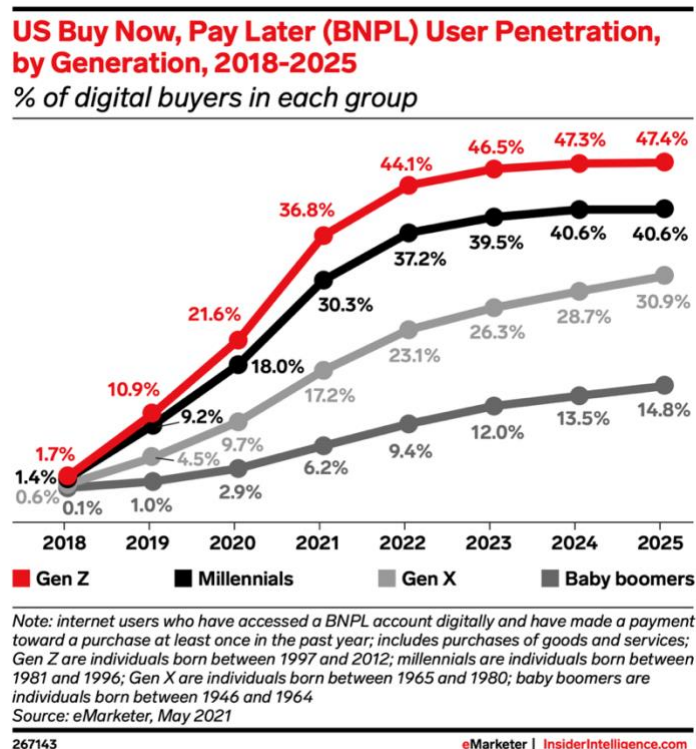


Exhibit 3 BNPL trades continue to see massive growth, especially with younger consumers.

Despite the increasing volume of BNPL transactions, credit bureaus and financial institutions have been largely blind to the tradeline data from these products until very recently. There are a variety of reasons for this, chief of which is that lenders extending BNPL products have legitimate concerns that inclusion of BNPL products will lead to different results in FICO tabulation due to their status as installment loans. While BNPL products are very different from traditional ILs (due to both shorter term and lower dollar value), they are (largely) legally classified as installment loans due to their structure. This means that until FICO has a chance to incorporate data for how BNPL trades differ from

⁵ <https://www.bloomberg.com/news/articles/2022-02-02/u-s-has-more-credit-cards-than-ever-as-issuance-surged-in-2021>

⁶ <https://www.emarketer.com/chart/248217/us-buy-now-pay-later-bnpl-user-penetration-by-generation-2018-2025-of-digital-buyers-each-group>

Leveraging BNPL data for Credit Risk

normal ILs, traditional credit risk models may treat a customer who leverages BNPL regularly similarly to a customer that books dozens of ILs in that same time period.

Once a critical mass of BNPL data is provided to the bureaus, BNPL data will have significant leverage in credit risk models, on both ends of the risk spectrum. BNPL data will help identify customers under serious economic stress that represent risky new loans, as well as helping thin file customers establish patterns of successful payments on small-dollar loans that can be used as a baseline to help build up their credit score and apply for larger products. Without BNPL data populated, the customers of the first group (payers under stress) will be able to continually pick up new products without bureau data reflecting their delinquency on their BNPL products. On the other end, customers of the second group will have artificially high risk, where their demonstrated proficiency at on-time payments on their BNPL products aren't being priced in to credit decisions on more substantial products that could deliver them serious financial betterment.

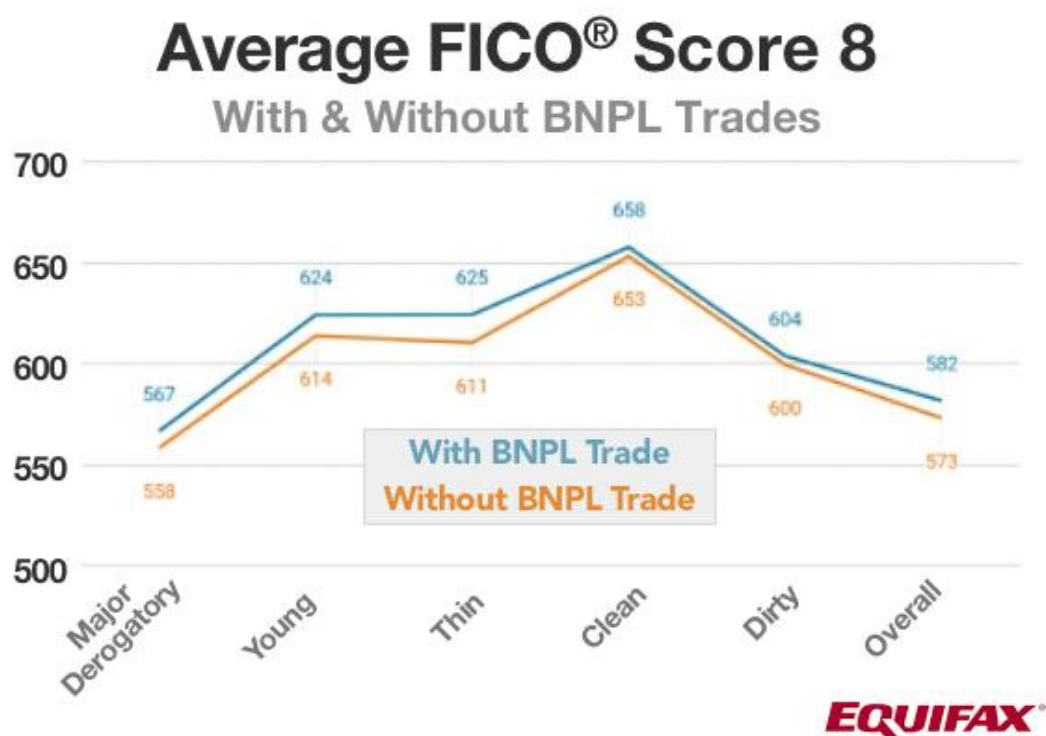


Exhibit 4 Including BNPL trades in the FICO model provides risk splitting, with a majority of customers getting a positive impact

Research by Equifax and FICO® provides a unique glimpse into the impact of including BNPL Line of Credit data into the risk scores of subprime customers.⁷ The inclusion of these Line of Credit BNPL trades had a positive impact on the FICO 8 scores for most

⁷ <https://www.equifax.com/business/blog/-/insight/article/analysis-how-buy-now-pay-later-can-impact-consumer-credit-scores/>

Leveraging BNPL data for Credit Risk

subprime customers within their test set, especially on populations with a short credit history with few active products (**Exhibit 4**). As expected, this is differentiated by BNPL performance – trades with on-time payments lead to higher FICO scores, while delinquent BNPL data corresponded to lower FICO scores.

It is worth noting that the sample in this research was significantly subprime, and represented line of credit trades – there is still much work to be done on aligning BNPL data and ensuring it is properly bureau reported. Once this data is more widely available and widely shared with the bureaus, BNPL data will benefit banks and FinTechs of all stripes, allowing for increased customer risk differentiation, especially among thin file customers. In the meanwhile, be sure to take special care in utilizing IL-flavored variables in your models, as these are likely to experience some additional variance over the coming years as BNPL products inundate the signal on classic IL products.

It is also important to note that BNPL trades are only one part of the story when it comes to credit normalization and data warping. Risk signals on subprime customers are being warped by credit builder tradelines as well. These new platforms (e.g., Chime) create opportunities for subprime customers to get secured credit cards that feature selective bureau reporting, which (similar to BNPL) can both help and harm credit builder customers in different ways depending on their behavior on the card. Both credit builder & BNPL trades have served as catnip for fraudsters, with both new vehicles proving to be attractive targets for both first party and synthetic fraudsters. Whether a customer's behavior on the trade is positive or negative, both BNPL & credit builder trades contribute to the post-COVID inflation of customer risk scores, and lead to distortion of true risk measurements on many subsets of the population.

How the Surge in Inflation Impacts Lending

While inflation of risk scores has been a major source of analysis for our firm, the more commonly discussed inflation – that of the U.S. dollar – has been more significant for lenders during Q1 of 2022. While this is not news to most lenders, we are currently experiencing a period of U.S. dollar inflation greater than any other experienced in the last three decades, and this inflation is providing universal increases on payment burden for customers of lower economic status.

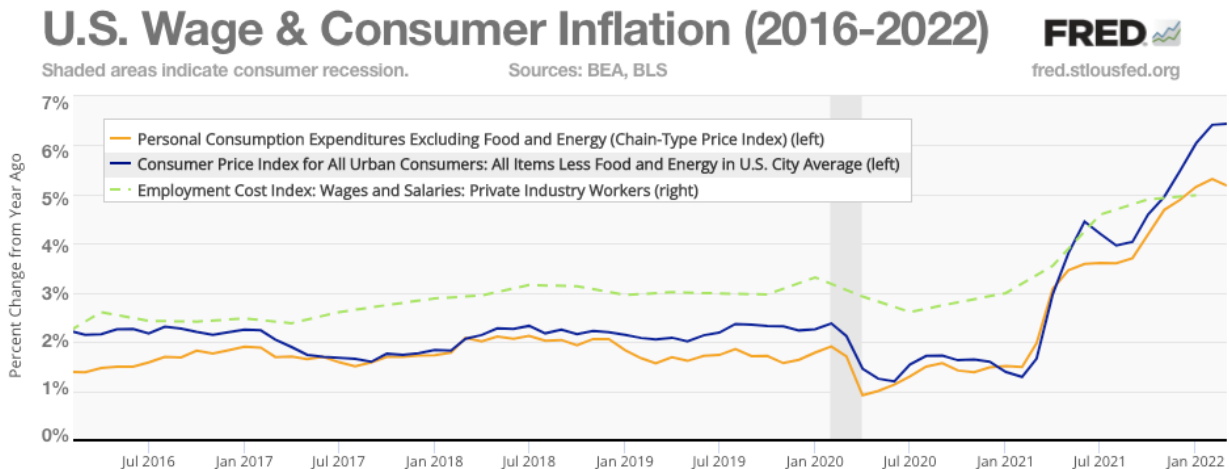
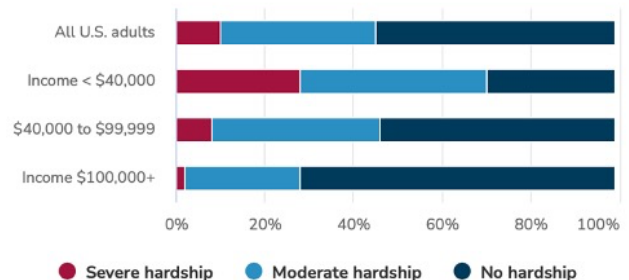


Exhibit 5 Consumer Price Index for all urban consumers over time, measured as percentage change from a year prior. Data from the St. Louis Federal Reserve as of March 2022

The Consumer Price Index (CPI), a Bureau of Labor Statistics (BLS) metric that measures the cost of a market basket of consumer goods and services, was already showing some troubling signs in December of 2021. It has been on an even higher upward trajectory since; at the current 8.5% increase from March 2021 to March 2022, the year-over-year CPI is currently higher than any year over year measure since 1981, during the early 1980s recession. The high inflationary pressure can be seen in **Exhibit 5**.

The impact inflation will have on your book will vary greatly depending on both the composition of your customer base and the kinds of products you offer borrowers. Fixed rate long-term loans will have clear backend value loss wrought by high inflation. Inflation also disproportionately impacts customers with lower income, with roughly 30% of customers earning less than \$40,000 in income reporting severe hardship (**Exhibit 6**).

"Have recent price increases caused any financial hardship for you or your household?"



Source: Gallup Panel poll (Nov. 13 - 16, 2021)

Exhibit 6 Inflation disproportionately impacts customers in lower income brackets. Nearly 30% of adults with <\$40k income reported severe hardship as early as Nov 2021

How the Surge in Inflation Impacts Lending

In the credit card universe, pure transactors (i.e., a customer who makes on-time payments and never revolves) will not show an obvious *initial* impact from inflation; without real past debt to speak of, there will not be an obvious need to price in any inflation impact on their profitability, assuming they are able to remain transactors. Conversely, revolvers (i.e., customers who regularly revolve large balances) will show a small but extant effect similar to that of a fixed rate loan – the value of their revolving balance will marginally decrease due to time value of money, and the fact that the customer spent the money they are now revolving when the money was worth more. At the end of the day, inflation isn't high enough to override the financial boon that high-APR revolvers represent for lenders, as APR thresholds are often well over the 8.5% actualized inflation. But it certainly will cut into the profitability of subprime revolvers, and must be calculated as part of any profitability analysis of product offerings going forward.

To quote a risk executive for a top credit card issuer: **“Inflation is causing us to be a bit more conservative in lines, but we’re not sure how far to go”.**

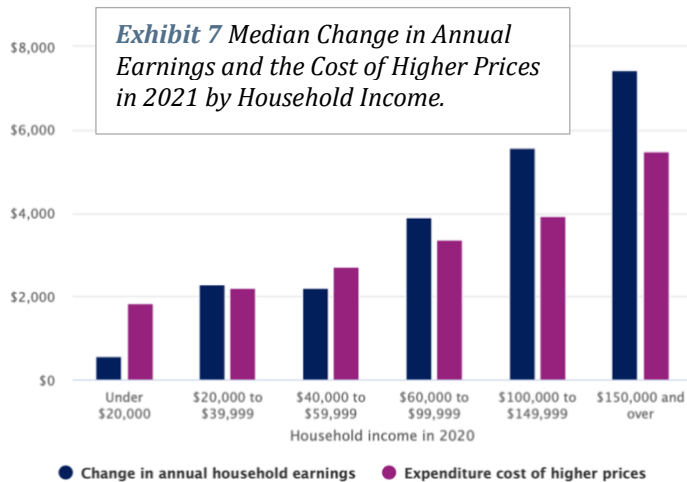
While these effects are moderately predictable (and can be assessed through minor changes to a firm's customer valuation models), the more pressing question that lenders will have to face is the behavior of customers that exist on the margin between a revolver and a transactor. With higher payment burden, there will be a shift of more customers towards revolving away from transacting; this in turn will lead to increased delinquencies, as customers that formerly paid bills on time are overwhelmed by the additional payment burden caused by inflation. Figuring out where your customers lie on this efficiency threshold will be a crucial piece of optimization for your organization as the lending industry deals with the knock-on effects of high inflation.

There is one mitigating factor against inflation that provides important context to these effects. As the government pumped significant quantities of stimulus money into the economy and allowed consumers access to increased unemployment benefits, firms across the United States were forced to increase wages to make up the gap. This wage increase does, to some extent, defray the impact of our decades-high inflation mark.

But that only defrays a portion of the impact. Even at the (quite high!) mark of 4.5% wage inflation ⁸, 8.5% real inflation still incurs a very real payment burden on a large percentage of borrowers. It is also worth emphasizing that the 4.5% wage inflation is not a universal mark. The BLS report that gave the 4.5% topline number also took care to note that different industries saw different levels of inflation. Wage inflation ranged from 3.3% within financial sector jobs all the way to 8% for leisure and hospitality.

⁸ <https://www.bls.gov/news.release/pdf/eci.pdf>

How the Surge in Inflation Impacts Lending



For lower income households, the gains due to wage-inflation are superseded by the increase in expenditure cost of higher prices, per the Penn Warton Budget model shown in **Exhibit 7**.⁹ Even though wages have increased slightly, the increase in expenses has washed out the entirety of the effect for borrowers earning less than \$60,000 per year. On the low end, this net loss of disposable income will lead to higher credit risk, especially if wage inflation decreases in the event

of economic hardship causing belt-tightening at U.S. employers.

In previous analysis on our client lenders, we have seen that a 10% decrease in real income correlates (roughly) with at least 2-3% worsening of default and delinquency behavior among borrowers. Taking this information in concert with the increasing concentration of subprime originations, it will be crucial for lenders to keep close tabs on default risk going forward, as borrowers may see their real income continue to decrease relative to inflation.

While inflation is going to cause major impacts across the board, the core message to lenders is simple – models used to provide valuation on your book must be modified to reflect the new normal, and all product offerings (new and old) need to be evaluated with the most recent inflation numbers fully implemented within models and policy to ensure that your firm is properly evaluating profitability across the spectrum.

⁹ <https://budgetmodel.wharton.upenn.edu/issues/2022/2/21/did-wages-keep-up-with-inflation-in-2021>

The Impact of Rising Asset Prices

Generalized price inflation impacts credit cards through the value of what consumers purchase on their card, as discussed above. But that isn't the only way that a lender can be impacted by inflation. One specific trend that bears special mention is the relationship of asset prices to asset-backed loans, and how lenders should adjust for this in their ongoing risk calculations. As a specific example, we will examine how auto loans have been impacted by inflation and rising automotive costs.

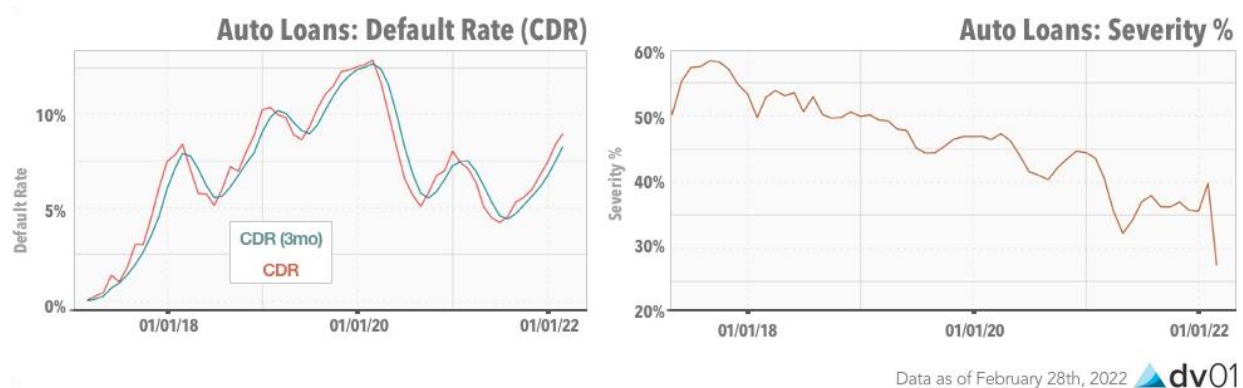


Exhibit 8 In the auto loan space, while charge-offs are still low overall, they have reached their highest mark since 02/2020. Despite increasing charge-off rates, severity continues to go down as the price of cars increases

As **Exhibit 8** demonstrates, charge-offs have reached the highest level since the pre-pandemic peak in February 2020 – as we've discussed, this is a normal trend across product lines, as default rates are beginning to reach their pre-pandemic levels across various asset classes. This upwards trend in delinquencies would tend to indicate increasing losses for auto loan businesses. However, this has not universally been the case, largely owing to how asset price impacts auto loan severity.

Auto loan severity at default depends to a small extent on the loan balance, LTV, and the origination pricing of the loan, but it depends far more on the condition and value of the underlying vehicle. More than almost any other kind of product, automotive vehicles have significant resale value, now more than ever. As seen in **Exhibit 9**, from the Equifax National Credit Trends Report, the number of auto loans has plateaued and even slightly decreased, but there is a visible bifurcation with the outstanding balances as the price of the underlying asset has significantly increased.

This increase in asset value has had a two-fold impact on auto loan product performance:

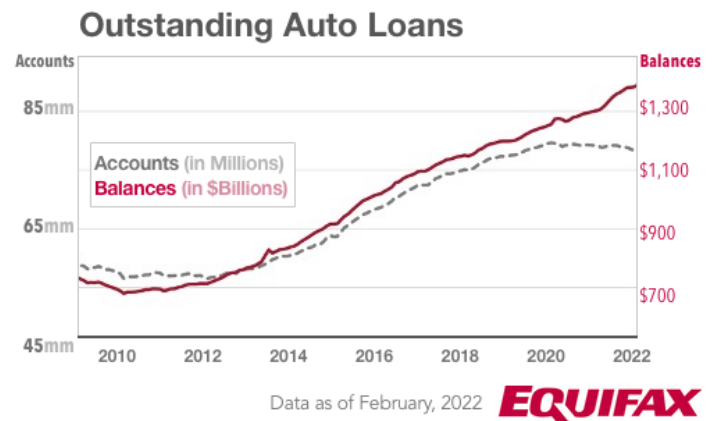


Exhibit 9 Due to the increase in car prices, although the number of loans has plateaued with a slight downward trend, the outstanding balance has increased substantially

The Impact of Rising Asset Prices

- As the value of the underlying asset has increased, recoveries have become increasingly high value, leading to lower severity (as seen in **Exhibit 8**).
- As the value of owning a used car rises, consumers are more likely to move the loan up their payment hierarchy, leading to lower delinquencies as consumers focus on paying back their auto loan over items that may have formerly taken precedence.¹⁰ Another potential impact is as car payments go up in the payment hierarchy - all else equal – performance of other non-secured loans can worsen.

It's important to note that this used car price inflation will come down eventually. Many of the supply chain constraints that have led to the rapid increase in used car demand can be attributed to the well-documented shortage in semiconductor chips which seems to be on the path to being alleviated.¹¹

Given this, auto loan issuers should take a fair bit of caution in projecting out future losses. A universe with lower auto prices likely pushes severity higher, which vastly changes P&L projections going forward. This is especially true of the P&L picture in subprime auto, where the overwhelmingly high recoveries on used cars are painting a much rosier picture than is perhaps prudent.

One additional facet to consider in your P&L projections across asset classes is the timing of recoveries. Typically, when a loan charges off there is a lag between when lenders can recover some of the lost principal. This varies by industry and strategy going from a few months to a few years. This lag creates a distortion effect on the vertical loss rate of a portfolio. During 2021 and 2020, this timing effect produced additional tailwinds on loss rates; not only were the losses lower, but recoveries were from the earlier times when losses were higher.

On an absolute basis, higher losses lead to higher recoveries. Moving forward, the tailwind effect that helped bolster the industry during COVID-19 turns into a headwind; the impact to 2022 loss rates due to this effect will increase losses, all else being equal; as suppressed recoveries from the low loss periods during COVID flow in to the books, the losses will appear higher. This of course is apart from the higher recoveries flowing-in in the Auto loan space where asset prices have inflated. This is another example that shows how P&L projections can be much trickier than usual as we come out of the COVID era.

¹⁰ As loans move around in a consumer's payment hierarchy, the movement can have both a positive impact on the loan that's moving and a worsening impact on the loans that are now lower in the hierarchy; it is worth noting that lenders with non-auto loans may see some side impacts from customers who have auto loans as a result of this hierarchy change.

¹¹ <https://www.jpmorgan.com/insights/research/supply-chain-chip-shortage>

Conclusion & Next Steps

- **Tackling risk score inflation:** Given the score inflation on multiple fronts (the deluge of student loan deferrals, the lack of BNPL tradeline data, and the muted delinquencies due to non-student COVID deferrals and government stimulus), lenders should take special care to deaverage their monitoring and examine signals within relevant populations in real-time monitoring and short-target analysis of new vintage risk. Entry into new populations should be done within rigorous testing frameworks, and risk models built on COVID data will require considerable adjustment as recent vintage data matures and offers new vectors to benchmark risk. Analysis of the degradation of your own models is crucial, as are correlation reports and broad-spectrum coefficient examinations to ensure that your models are retaining enough fit to properly assess customer risk.¹²
- **Recession Scenarios & Loss Forecasting:** The current inflationary trends will likely prove applicable to our next recession. As a result, lenders should closely analyze and monitor their in-use recession scenarios to ensure they are reflecting a high-inflation, rubber banding DQ situation as customers returning to BAU relatively rapidly from COVID-19 lows. In the auto loan space specifically, lenders must also pay special attention to timing of recoveries, building in the underlying-asset's price fluctuation into their P&L to adjust for expected price drops once the semiconductor shortage concludes and auto supply catches up with demand.
- **Preparing for BNPL Data:** While BNPL data is not yet widely accessible, the bureaus are beginning the process of incorporating it and figuring out what the data will look like in the future. Be sure to engage strongly with your bureau partners about what this BNPL data will look like as the trades begin to hit your average customer's tradeline, and future-proof your models by taking note of places where models are relying on variables that include installment loan products that will look quite a bit different after BNPL data is fully integrated within your customer data.
- **Collection Infrastructure:** Now is a great time for lenders to review their collections infrastructure.¹³ When severity is low, collections infrastructure always looks a little better; need to ensure that lenders are not ignoring the BAU "make the business work" processes that makes collection houses operate successfully. It is important to ensure that fraud defenses are in place and future projections do not rely on the abnormally low severity, especially for lenders that have dramatically increased in size over the duration of the pandemic.

¹² 20S has helped a number of clients with engagements on model degradation and score inflation analysis. Contact us for more details

¹³ A new 20S whitepaper on Collections best practice will be released in May 2022. Contact your 20S representative for an advance copy of the 20S Collections report.

Acknowledgements

This report was prepared by Syed Raza, Aaron McGuire, and Scott Barton.

- **Syed Raza, PhD** is a Senior Data Scientist at 2nd Order Solutions with 3+ years of experience in the lending industry; he has built several credit risk models across multiple financial institutions and advised clients across the consumer credit lifecycle. He specializes in COVID's impact on unsecured lending.
- **Aaron McGuire** is a Senior Director of Data Science at 2nd Order Solutions; he has built statistically rigorous acquisitions & customer management credit risk frameworks across the industry for dozens of financial institutions, from top-5 banks to fintech lenders. He specializes in analysis of bureau data feeds and creating rigorously documented ML models to accelerate the
- **Scott Barton** is the Founder and Managing Partner at 2nd Order Solutions; he has led hundreds of major initiatives for major banks and fintechs, including overhauls of Collection strategies, overarching model redesigns, and major architectural changes to organizational credit risk assessment. He previously was one of a handful of Senior Credit Officers at Capital One and led several business units, including Partnerships, Collections, Recoveries, and Fraud.

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About 2OS

2nd Order Solutions (2OS) is a boutique credit risk advisory firm that specializes in solving the world's most challenging credit problems. 2OS was founded 12 years ago and consults to a wide range of banks, card issuers, fintechs, and specialty finance companies in the US and abroad.

2OS has deep experience with lending businesses across Card, Auto, Small Business, and Personal Loans, at all points in the credit lifecycle. 2OS partners have vast expertise in all aspects of Collections, both as operating executives and as consultants.

Appendix

Data Timelines

Data	Source	Latest Data Available
Consumer Credit Trends	dv01	March 22, 2022
	Equifax	February, 2022
	Experian	February 26, 2022
Credit Origination	dv01	March 31, 2022
	Equifax	December, 2021

Extra Graphs

Delinquency Trends

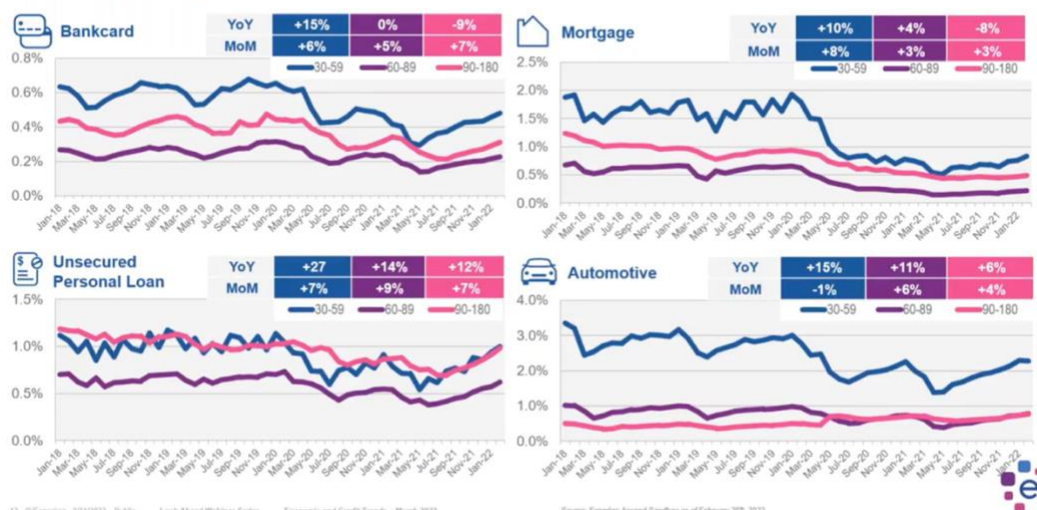


Exhibit A1 Overall delinquencies remain at pre-pandemic lows across tradelines. Source: Experian Economic and Credit Trends as of February 26 2022

Appendix

Bigger Balances

Consumer borrowing in U.S. surged by nearly \$42 billion in February

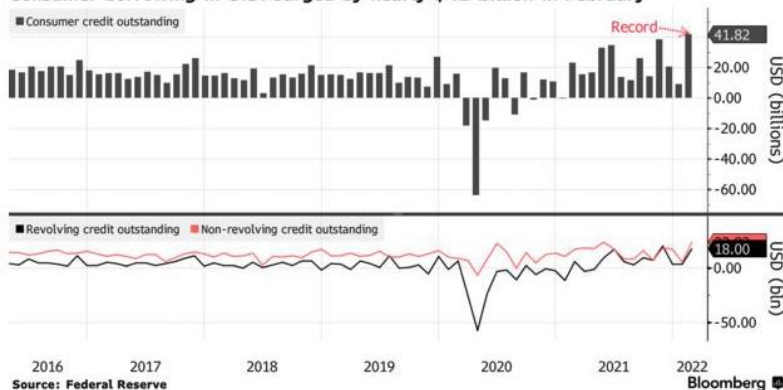


Exhibit A2 February 2022 saw the highest ever volume of credit issued on record ¹⁴

Credit Cards: Bankcard

YTD Bankcard Origination Credit Limits

Year-to-Date Total Credit Limits in \$Billions; Subprime Share of Total Origination Credit Limits (%); NSA
Subprime accounts defined as those with borrower's origination VantageScore® 3.0 credit score less than 620

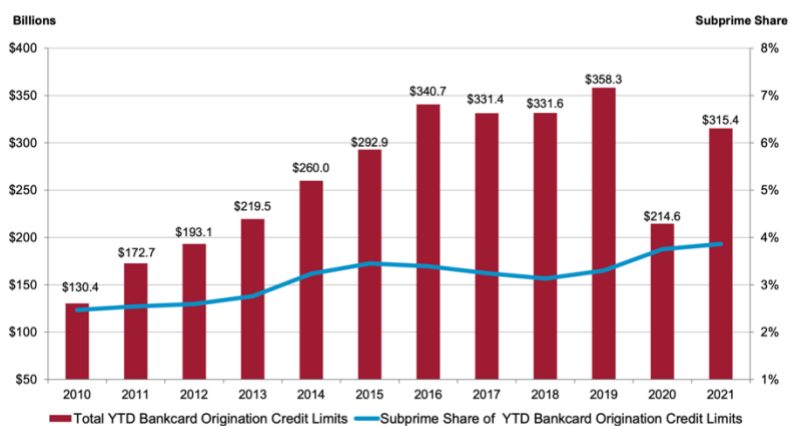


Exhibit A3 Subprime share of total originations continues to rise

Credit Cards: Bankcard

Subprime Bankcard Originations: Accounts

Number of Accounts in Millions; NSA
Subprime accounts defined as those with borrower's origination VantageScore® 3.0 credit score less than 620

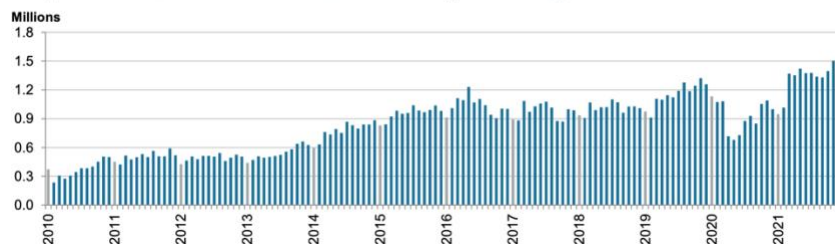


Exhibit A4 Subprime originations continue to rise with the highest ever volume. Equifax data as of February 2022

¹⁴ <https://www.bloomberg.com/news/articles/2022-04-07/consumer-borrowing-in-u-s-surges-by-a-record-41-8-billion>

Appendix

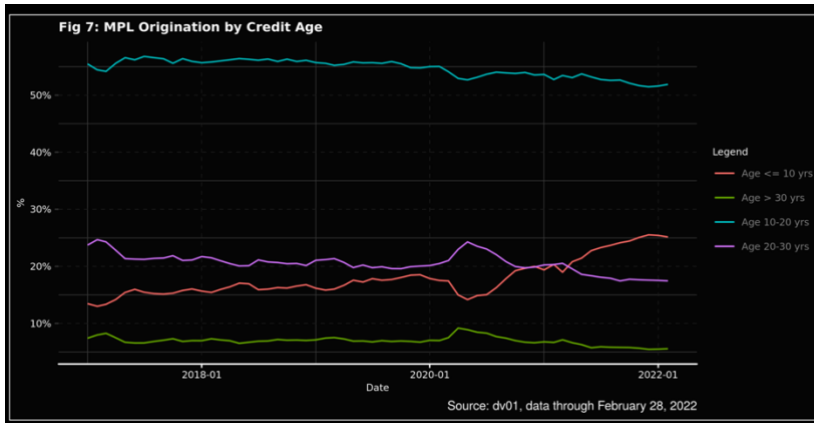


Exhibit A5 Originations with Credit Age ≤ 10 continues to rise. Student loan deferrals are somewhat muting the 'real' risk of young borrowers, leading to higher originations and credit expansion as students face lowered payment burden. Source dv01 origination report with data through February 28 2022

Supply constraints in the auto market remain

First half of 2022 looks to be a continuation of 2021 – you can't buy what you can't find

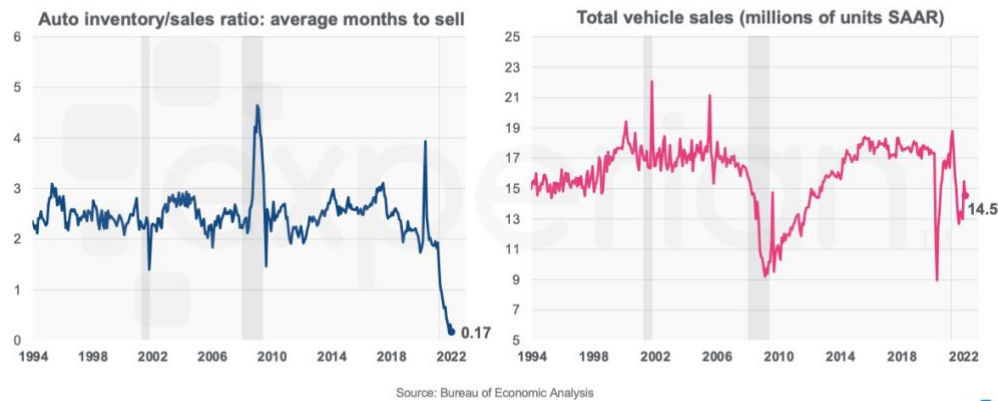
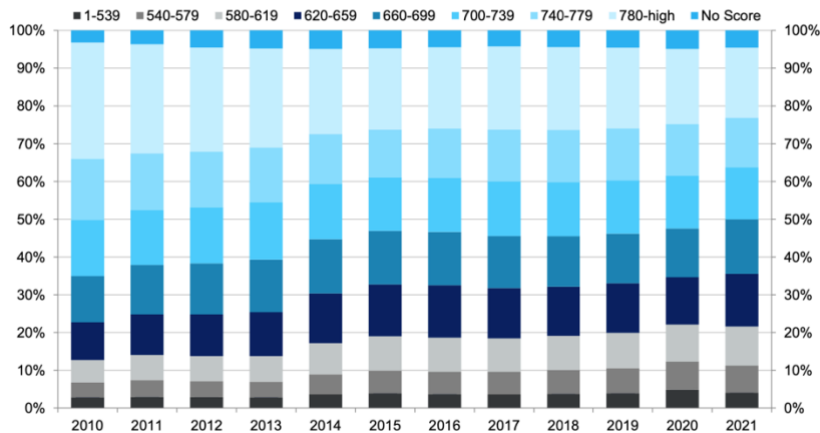


Exhibit A6 Due to supply constraints the auto inventory to sales ratio is at an all time low

Credit Cards: Bankcard

Bankcard Origination Risk

Year-to-date VantageScore® 3.0 Distribution for Bankcard Originations by Year (Percent of Accounts)



Source: Equifax Inc.

Originations through December 2021 reported as of February 2022

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Exhibit A7 Chart showing risk score inflation especially after COVID due to the number of factors discussed in this paper and the previous one