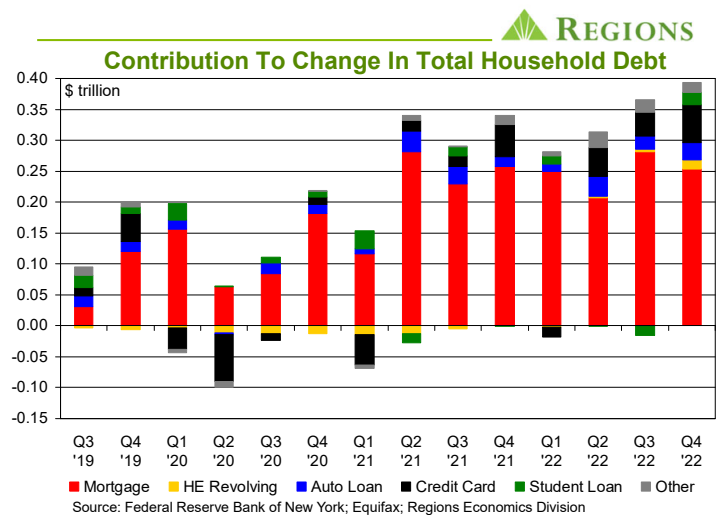
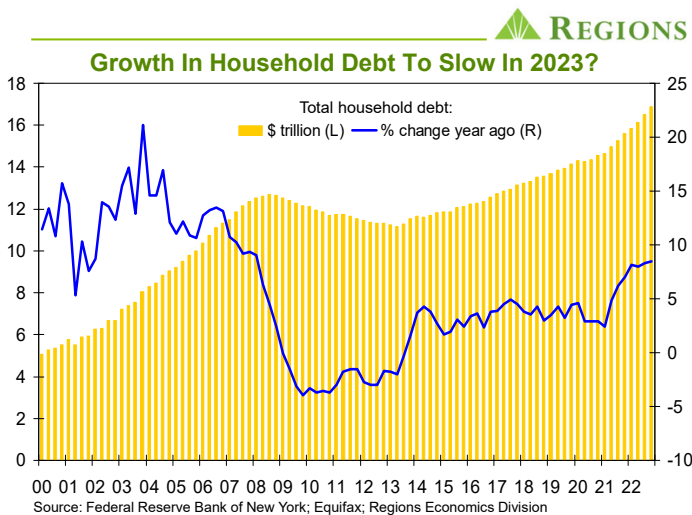


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Q4 2022 Household Debt and Credit: What's Behind Rapid Growth In Credit Card Debt?

- Total household debt rose to \$16.899 trillion in Q4 2022, an increase of \$394 billion from Q3 2022
- Mortgage balances rose by \$254 billion in Q4, credit card debt increased by \$61 billion
- As of Q4, 2.50 percent of outstanding household debt was in some stage of delinquency, down from 2.69 percent in Q3

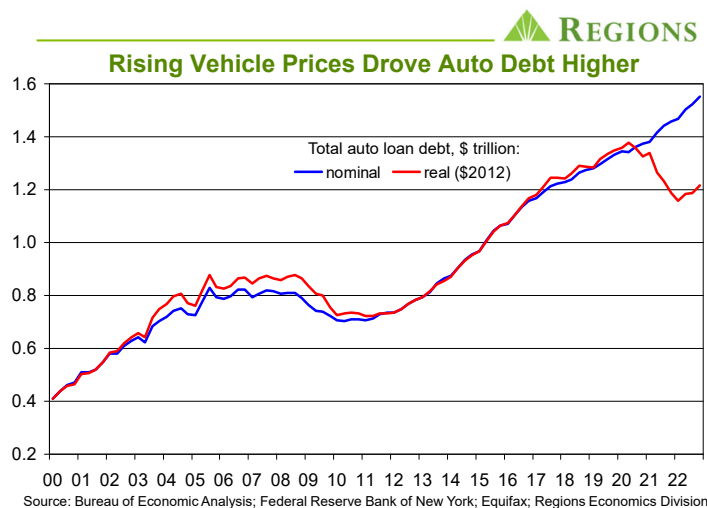
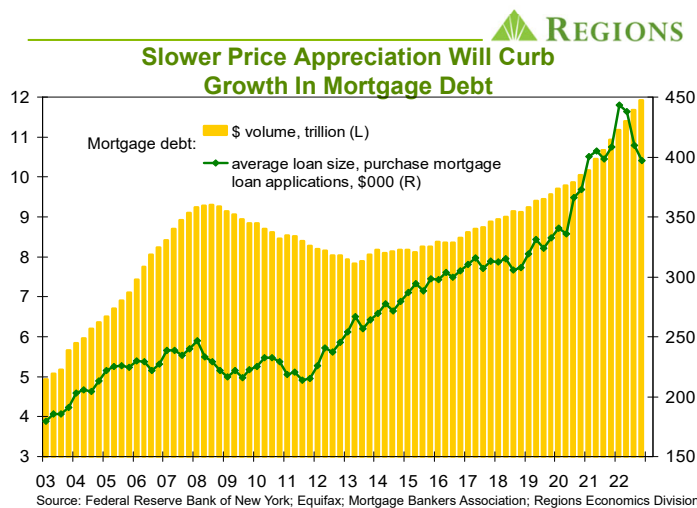
The Federal Reserve Bank of New York (New York Fed), in conjunction with Equifax, has released their latest quarterly report on trends in household debt, which shows total household debt rose to \$16.899 trillion in Q4 2022, an increase of \$394 billion from Q3. Mortgage debt outstanding increased by \$254 billion, a smaller increase than that seen in Q3 due in part to a dramatic slowing in mortgage origination volumes, while credit card debt rose by \$61 billion, the largest quarterly increase in the life of the data series and going well beyond the typical seasonal Q4 increase. On an over-the-year basis, credit card debt outstanding was up 15.2 percent, the second straight quarter in which year-on-year growth topped fifteen percent. Total household debt was up 8.5 percent year-on-year in Q4, with mortgage debt outstanding up 9.1 percent, with credit card debt having posted a larger over-the-year percentage increase than mortgage debt in each of the past three quarters. Elevated inflation has clearly driven some of the growth in household debt over recent quarters, but with inflation easing, even if not in a straight-line fashion, and mortgage originations likely to remain weak, growth in total household debt should slow in the quarters ahead. The overall delinquency rate on household debt fell to 2.50 percent in Q4, and while some segments, such as auto loans, have seen rising delinquencies, those have thus far been highly concentrated amongst subprime borrowers, though the New York Fed notes rising credit card delinquencies amongst younger borrowers.



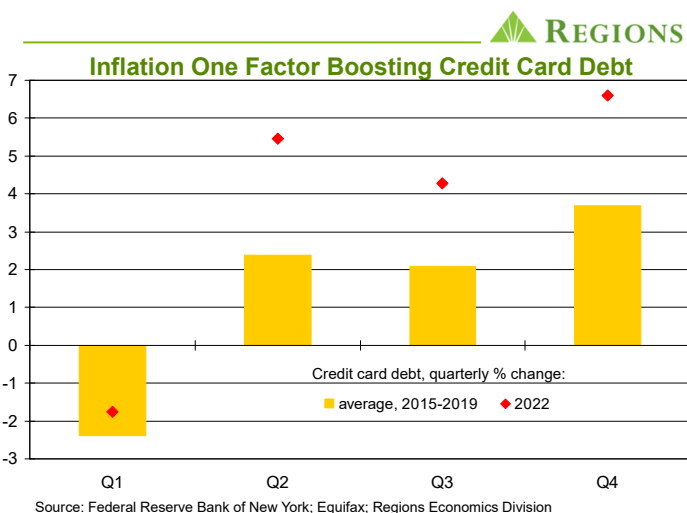
At \$254 billion, the increase in outstanding mortgage debt in Q4 was smaller than the \$282 billion increase in Q3 but nonetheless still much larger than the typical quarterly increases prior to the pandemic. Over the past two years, higher sales volumes and rapidly rising house prices boosted growth in purchase mortgage originations, but with sales having tumbled over the past few quarters and house prices coming under increased downward pressure, growth in mortgage debt outstanding is set to slow further in the quarters ahead. That mortgage refinancing activity remains notably depressed by mortgage interest rates that are significantly higher than has been the case in several years will continue to act as a drag on growth in mortgage debt.

Mortgage debt is not the only instance in which we can point to rapidly rising prices as having been a factor in faster growth in household debt. For instance, used vehicle prices soared after the onset of the pandemic, reflecting increasingly limited supplies and rising demand, with the increases in prices for used motor vehicles so substantial that they were one of the prime factors behind the spike in inflation as measured by the Consumer Price Index (CPI) despite carrying a fairly small expenditures weight. Prices for new vehicles also rose at an unusually rapid pace as disruptions in production after the onset of the pandemic sharply curtailed supplies of new vehicles for sale. One way to see the impact of higher prices is to deflate nominal auto loan debt outstanding by the CPI index of new and used vehicle prices. Doing so shows that in real, or, inflation adjusted, terms, the level of auto loan debt outstanding actually fell from Q3 2020 through Q1 2022 before turning back up even as the level of auto loan debt in nominal terms continued to march steadily higher. As of Q4 2022, the level of real auto loan debt outstanding was 11.6 percent below the peak level hit in Q2 2020. New vehicle supplies are

improving, thus leading to some easing of price pressures, while used vehicle prices have again reversed course, with renewed supply crunches touching off another bout of rising prices. Higher interest rates and tighter underwriting standards, however, should curb overall origination volumes, which suggests slower growth in auto loan debt outstanding over coming quarters.



Elevated inflation has also played a part in the rapid growth in credit card debt outstanding over recent quarters. Many take this rapid growth as evidence of mounting financial distress amongst consumers, and to some extent the two are linked. Rapidly rising prices could be depleting financial resources amongst a growing subset of consumers, leaving them to resort to credit cards to facilitate purchases of necessities such as food and clothing. We simply do not have sufficient detail in the data to be able to make such distinctions with any degree of confidence, and while we would by no means rule out financial distress as a driver of more rapid growth in credit card debt, neither would we accept that as the sole driver. Indeed, it could be that consumers who continue to engage in discretionary services spending, such as travel, dining out, entertainment, and recreation, continue to use credit card debt to facilitate such purchases as they always have, with higher prices for such services leading to more rapid growth in overall credit card debt. It is also worth noting that borrowers having positive card balances at some point during a given month does not necessarily mean they carry those balances forward month-to-month, as a significant share of card accounts are paid in full each month. And, while pools of excess saving have been thinned down, they nonetheless remain substantial, which makes it harder to interpret the growth in credit card debt. The limited, and somewhat lagged, data we do have from the Federal Reserve shows deposit balances still above pre-pandemic levels across all household income buckets. While the math (i.e., credit card interest rates versus interest rates on deposit accounts) would dictate running down deposit balances further before running up card balances, it could be that elevated deposit balances provide psychological comfort such that consumers are trying to preserve them even if doing so is costly.



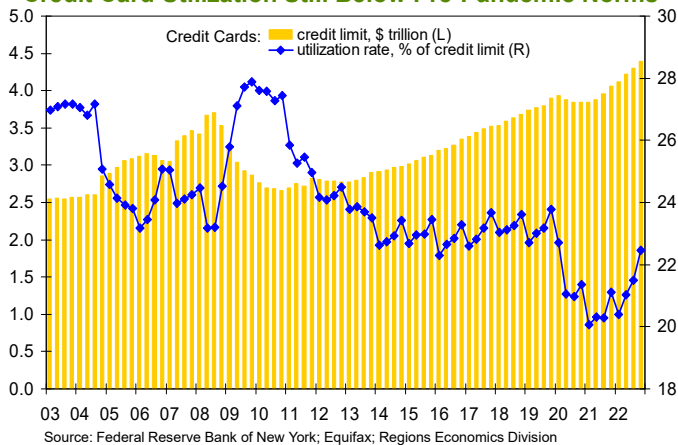
Putting aside for now the question of what is driving it, the rapid growth in credit card has still conformed to typical seasonal patterns, just to a greater degree, as the chart to the side shows. As is typically the case in any given year, the quarterly increase in credit card debt in Q4 2022 was the largest of any quarter of the year but, at 6.6 percent, was much larger than the normal Q4 increase – an average of 3.7 percent in Q4 of the five years prior to the pandemic. That was also the case in the second and third quarters of 2022, while the decline in Q1 was smaller than the average Q1 decline in the pre-pandemic years. We’re more inclined to attribute these patterns to elevated inflation and to shifting patterns in consumer spending that saw a return of discretionary services spending over the back half of 2022. Still, we will be awaiting the Q1 2023 data; while we expect outstanding credit card debt to decline, as is typically the case in the first quarter of any given year, we would take either a much smaller decline than normal or an outright increase in credit card debt outstanding as evidence of growing financial distress.

To add further context to the more rapid growth in credit card debt over recent quarters, we’ll note that though rising sharply during 2022, credit card utilization rates nonetheless ended the year (22.46 percent of available balances) meaningfully below where they were in the last quarter prior to the onset of the pandemic (23.79 percent of available balances). Again, typical seasonal patterns dictate a

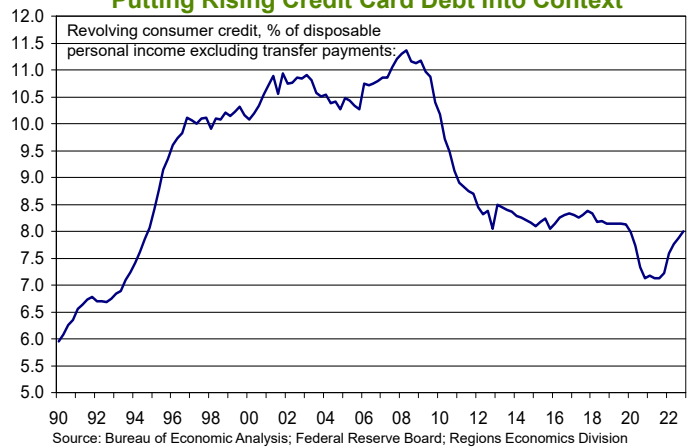
dip in credit card utilization rates in Q1 2023, so what will be more relevant is the magnitude of that dip relative to recent historical norms. We will note, however, that with lenders upping standards it could be that card limits don't rise to the extent they have over recent quarters, if even at all, which would check any decline in utilization rates. Additionally, though not from the same data series as the New York Fed data, we looked at revolving consumer credit outstanding from the Federal Reserve's monthly series as a percentage of disposable personal income excluding transfer payments, which we show in the second chart below. One reason we used this series is its longer history, as the Federal Reserve series goes back several decades though we only show the data from 1990 onward. Also, we use ex-transfers, after-tax income as our basis for comparison because we see this as the pool of funds out of which households service debt, as opposed to pre-tax measures of personal income that include transfer payments. As the chart shows, while this version of a debt-to-income ratio rose during 2022, it nonetheless remains below pre-pandemic norms. Our point in showing this ratio is simply to illustrate that while there are no doubts pockets of financial distress, those for now are far more the exception than the rule, which makes sense given that the labor market remains robust (perhaps too robust for the liking of some central bankers). Should labor market conditions begin to deteriorate to a meaningful degree, slower growth in labor earnings would weigh on growth in ex-transfers personal income and our narrowly defined (credit card) debt-to-income ratio would quickly push much higher.



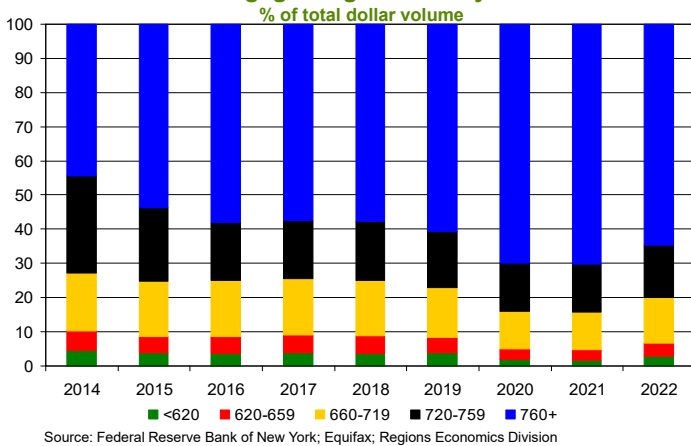
Credit Card Utilization Still Below Pre-Pandemic Norms



Putting Rising Credit Card Debt Into Context



Annual Mortgage Originations By Risk Score



Though still remaining highly concentrated amongst borrowers with higher credit scores, mortgage loan originations were a bit less so in 2022. Of the dollar volume of mortgage loan originations in 2022, 64.74 percent went to borrowers with credit scores of 760 or higher, down from 70.18 percent in 2021 and 69.83 percent in 2020 but still easily ahead of pre-pandemic norms, while borrowers in each of the lower score buckets accounted for slightly higher shares. This could simply reflect sales patterns as sales of homes in the highest price range suffered the largest decline over the second half of 2022, or it could reflect lenders reaching further to make new loans as overall sales were taking a tumble. Still, even if it was more of the latter than the former, it wasn't all that long of a reach given the relative shares amongst credit score buckets, and with growing shares of lenders tightening mortgage lending standards over the past two quarters, it could be that the share of origination volumes going to those with credit scores of 760 or above reverses course and rises in 2023.

While auto loan originations have been more evenly distributed across credit score buckets, over one-third of the dollar volume of originations in 2022 went to those with credit scores at or above 760, the fourth consecutive year in which this was the case. There has been some speculation that the sizable boost to personal income in the form of transfer payments in 2020 and 2021 that enabled many households to pare down/pay off debt provided an artificial boost to credit scores, with the burst in income masking less favorable longer-term trends in income levels/growth. With no further transfer payments and excess saving balances being pared down, it could be that there will be growing pressure on loan performance, particularly for auto and credit card loans amongst borrowers in the lower credit score buckets. As it is, loan performance amongst the sub-prime segment of auto loans has already begun to deteriorate. Amongst

the most at risk are those who purchased a used vehicle while prices were at or near their peak who, with used vehicle prices having declined over the last few months of 2022, could now effectively be underwater on their loan. While the reversal in prices for used vehicles thus far in 2023 may fend off such occurrences, it isn't clear whether or for how long used vehicle prices will continue to rise, and to us it seems more likely they will again start to fall later this year. Should this coincide with a meaningful deterioration in labor market conditions, losses on subprime auto loans could begin to mount at a rapid rate.

As noted earlier, the New York Fed reports that credit card and auto loan performance amongst younger borrowers has already begun to deteriorate. This is more readily seen in the data broken down by the number of loans as opposed to by the dollar volume of loans, though the New York Fed does not typically provide such detail in their quarterly reports. It could be that younger borrowers are more likely to be in lower household income buckets and, as such, may be lacking the financial resources to withstand higher inflation and higher interest rates, with the latter leading to higher minimum monthly payments on credit card debt. We've noted that the vast majority of debt on household balance sheets is fixed rate debt, thus insulating households against the kind of payment reset shocks seen in past cycles of rising interest rates. The one obvious exception is credit card debt, which is variable rate debt, and it could be that credit card payments are pinching younger borrowers more harshly by credit card payment resets than they are older, more financially established borrowers. Moreover, while at present there remains considerable uncertainty around repayment of student loans – who pays how much and when – this is another potential source of financial stress that could impact loan performance which would be more concentrated amongst younger borrowers.

More broadly, for lenders balance-weighted delinquency rates are of more relevance than delinquencies on a number-of-loans basis. Balance-weighted delinquencies remain notably low, with the overall delinquency rate falling from 2.69 percent in Q3 2022 to 2.50 percent in Q4. To our earlier discussion, it is also likely that younger borrowers have smaller loan balances than do older, more financially established borrowers, helping to reconcile the disparities in delinquency rates measured in terms of balances and measured in terms of loan numbers. Either way, it is likely that delinquencies will rise further over coming quarters. Whether this reflects meaningful deterioration in labor market conditions that would put greater numbers of borrowers at risk, or whether this reflects the cumulative effects of elevated inflation and higher interest rates remains to be seen. The question, however, is whether delinquency rates revert back to pre-pandemic norms, or whether they move meaningfully higher. It is too soon to make that call but, barring a more pronounced and more prolonged weakening in labor market conditions and the broader economy than most are expecting, it seems unlikely that balance-weighted delinquency rates will approach the heights scaled during the 2007-09 recession.

