Household Debt-At-Risk Amid Jobs Losses

Executive Summary: Sizing Up Potential Household Debt-At-Risk
The U.S. economy has added more than nine million jobs in the past three months, but payrolls today remain more than 8% below their February peak due to the 22 million jobs that vanished in March and April. However, momentum in the labor market is slowing and delinquencies for some categories of debt are rising. To what extent are various categories of household debt-at-risk if it takes a prolonged time for individuals to find work?

Our analysis, which looks at aggregate measures of household debt through the lens of job losses by income level, suggests that the share of household debt that is at risk, although large in absolute dollar terms, likely does not present an existential risk to the overall financial system. Our base-case scenario finds that the share of total household debt-at-risk totals roughly $800 billion, which is equivalent to approximately 6% of total household debt outstanding. But there are also some mitigating factors that could reduce that amount. By category of debt, the share of debt-at-risk is highest for student loans with about 8% of those loans at risk, followed by credit cards and auto loans (both roughly 6%). Mortgages are the least vulnerable according to our analysis with about a 5.5% share of debt outstanding at risk as a direct result of recent job losses.

Jobs: Steep Losses then Swift Recovery, but Losing Momentum
Nonfarm payrolls nosedived by more than 22 million jobs between their high-water mark in February and their lockdown-induced low in April. Employment growth has subsequently been positive for three consecutive months, but there were still nearly 13 million fewer jobs in July than in February. Although job losses have been concentrated in lower-paying industries, all major industries have fewer employees today than they did in February (Figure 1). For example, employment in the leisure & hospitality industry, which has the lowest average hourly wage, is down about 25% relative to February, while payrolls in the information industry, the highest paying industry, have declined by roughly 11% over that period.

Delinquencies among major categories of household debt tend to rise whenever the economy slides into recession. For example, the percentage of credit card obligations that are more than 90 days past due shot up to 9.8% in Q2-2020 from 8.4% in Q4-2019 (Figure 2). Delinquencies among other types of household debt are sure to follow suit. With job losses concentrated in lower-paid industries and Congress currently at a stalemate regarding additional fiscal stimulus, unemployed households may feel stretched thin in coming months in terms of monthly loan payments. Therefore, financial institutions could soon be facing significant credit losses. Could these potential losses threaten the viability of the American financial system, thereby dealing another major shock to the U.S. economy?

In order to shed some light on this question, we conducted an analysis of different categories of household debt across income cohorts to estimate potential losses that could occur if workers remain unemployed for a prolonged period and are not able to service their debt. We essentially

1. We thank Hadi Afrasiabi, Ryan Brinkoetter, and Philip Hong, who are all fixed income analysts at Wells Fargo Securities, for helpful comments.
2. The recent decline in delinquencies, particularly for student and mortgage loans, is largely due to forbearance, both from the CARES Act and voluntarily by lenders.
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August 26, 2020

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relied on the Federal Reserve’s Survey of Consumer Finances for the share of debt held by each income cohort, and analyzed two scenarios in which we estimated the amount of debt outstanding held among unemployed workers today by considering the number of jobs lost per cohort.3 We present our main findings in the remainder of this report and refer interested readers to the appendix for further details on our methodology.

Figure 1

Job Loss by Industry

Millions

Utilities
Information
Prof. & Business Services
Wholesale Trade
Construction
Manufacturing
Educ. & Health Services
Other Services
Transport & Ware.
Retail Trade
Leisure & Hospitality

Feb-April Job Loss
Feb-July Job Loss

2019 Average Hourly Earnings

Higher

Lower

Source: U.S. Department of Labor, Federal Reserve Bank of New York and Wells Fargo Securities

At-risk debt varies not only across income cohort but by debt category.

What a Sustained Downturn in Labor Means for Household Credit

There is over $14 trillion in outstanding household debt in the United States, according to the Federal Reserve Bank of New York. Breaking it out by category, mortgages account for more than 70% of household debt. Student loans represent the next largest category (11% of total household debt), then auto loans (about 9%), credit cards (a little less than 6%) and other loans (3%). The keys to sizing up potential credit losses are exposure to these categories and job loss among income groups. Although mortgages represent the bulk of outstanding debt (Figure 3), mortgage debt has the smallest share of debt-at-risk at 5.5% (Figure 4). The majority of mortgage debt is held by higher-income cohorts, where job losses have been less common. As we will discuss subsequently, debt-at-risk varies not only across income cohort but by debt category.

Figure 3

Total Household Debt

Trillions of Dollars; Mortgage Debt includes HE Revolving Debt

Source: U.S. Department of Labor, Federal Reserve System and Wells Fargo Securities

Figure 4

Household Debt-At-Risk to Job Loss

Share of Debt Category, Q2-2020

Source: U.S. Department of Labor, Federal Reserve System and Wells Fargo Securities

3 To estimate the amount of debt held by recently unemployed workers, or what we refer to herein as “debt-at-risk,” we mapped employment from 75 industries (95.6% of total private-industry employment) to the household debt income cohorts from the 2016 Survey of Consumer Finances (latest available). We drew more recent debt data from the NY Fed’s Q2-2020 Household Debt and Credit report. For a detailed explanation of our methodology, please see the Appendix on Page 6.
**Mortgages: Mostly Held by the Higher Income Households, but Risk at the Tails**

Of the more than $14 trillion in household debt, the $10.7 trillion worth of mortgage debt represents the largest share (by far). Moreover, mortgage debt rises with income level, with the top 10% of income earners holding over a third of all mortgage debt (Figure 5). In contrast, most households in the bottom-three income groups do not have mortgage debt; only 13.3% of households in the lowest income quintile had a mortgage in 2016. So it is not terribly surprising that the bottom three quintiles hold less than a third of all mortgage debt despite comprising 60% of households. This may be a regrettable observation in the context of income and wealth inequality, but it suggests that a greater share of job losses among lower-income earners presents less of a risk in terms of credit losses simply due to the smaller share of mortgage debt held by this group.

Our analysis finds that a bit more than $500 billion in mortgage debt could be impacted by recent job losses. Although large in an absolute sense, that amount represents only 5.5% of total mortgage debt outstanding (Figure 4). The drivers of that exposure largely come from the opposite ends of the income spectrum. Although only a small share of high-income earners have lost their jobs, the huge dollar amount relative to other income groups means the mortgages of the highest earners account for roughly 30% of mortgage debt-at-risk (Figure 6). The next largest share of mortgage debt-at-risk would be at the other end of the spectrum: the bottom income earners. Although this group has the lowest share of households holding mortgage debt, the higher incidence of job loss among its members means a disproportionately large share of debt-at-risk should they not find work.

But there are some mitigating factors that could reduce impairment of mortgage debt. First, households with high levels of income also tend to have significant amounts of financial assets that could be used to service debt, which should reduce the risk of default. Second, homeowners generally have more equity in their homes today than they did a decade ago. The ratio of equity-to-home value among homeowners stood at roughly 55% on the eve of the financial crisis. That ratio is 65% today. Consequently, homeowners may be less willing to default on their mortgages today than they were a decade ago.

**Figure 5**

<table>
<thead>
<tr>
<th>Percent of Debt Outstanding by Income Cohort, Q2-2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;20</td>
</tr>
<tr>
<td>20–39.9</td>
</tr>
<tr>
<td>40–59.9</td>
</tr>
<tr>
<td>60–79.9</td>
</tr>
<tr>
<td>80–89.9</td>
</tr>
<tr>
<td>90–100</td>
</tr>
</tbody>
</table>

**Figure 6**

<table>
<thead>
<tr>
<th>Percent of Total Mortgage Debt-at-Risk by Income Cohort, Q2-2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;20</td>
</tr>
<tr>
<td>20–39.9</td>
</tr>
<tr>
<td>40–59.9</td>
</tr>
<tr>
<td>60–79.9</td>
</tr>
<tr>
<td>80–89.9</td>
</tr>
<tr>
<td>90–100</td>
</tr>
</tbody>
</table>

Source: U.S. Department of Labor, Federal Reserve System and Wells Fargo Securities

**Student Loans: The Fastest Growing Category and Mostly Held by the Middle Class**

The next largest category of debt is student loans, though this was not always the case. Student loan debt was the smallest category of household debt as recently as the early 2000s, but it has ballooned over the past 20 years to become the second largest. Although this debt category is more evenly...
spread across income cohorts than mortgages, in some ways the pattern is reversed. That is, lower income households tend to hold more, and higher income households hold the least (Figure 7). Just 16.6% of the richest households had student loans in 2016, compared to more than 25% of households in the next three income groups. Between 18% and 20% of households in the bottom-two income groups have student loans, perhaps partly reflecting lower levels of opportunity for higher educational attainment in those groups.

Our analysis finds that the most of the debt-at-risk for student loans resulting from job losses comes from the bottom groups of income earners (Figure 8). In fact, the bottom quintile alone accounts for half of all the student loan debt-at-risk. In contrast, the top income group accounts for only 5% of the debt-at-risk. With job losses concentrated among the lowest-paid workers, student loan debt could suffer disproportionately if employment does not continue to rebound in coming months. Indeed, we estimate that close to 8% of student loan debt could be at risk to credit losses if employment remains depressed (Figure 4).

**Figure 7**

**Student Debt Outstanding**

<table>
<thead>
<tr>
<th>Income Cohort</th>
<th>Share of Debt Outstanding</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;=20</td>
<td>26%</td>
</tr>
<tr>
<td>20-39.9</td>
<td>17%</td>
</tr>
<tr>
<td>40-59.9</td>
<td>18%</td>
</tr>
<tr>
<td>60-79.9</td>
<td>9%</td>
</tr>
<tr>
<td>80-89.9</td>
<td>8%</td>
</tr>
<tr>
<td>90-100</td>
<td>5%</td>
</tr>
</tbody>
</table>

**Figure 8**

**Estimated Student Debt-At-Risk to Job Loss**

<table>
<thead>
<tr>
<th>Income Cohort</th>
<th>Percent of Total Student Debt-At-Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;=20</td>
<td>50%</td>
</tr>
<tr>
<td>20-39.9</td>
<td>17%</td>
</tr>
<tr>
<td>40-59.9</td>
<td>16%</td>
</tr>
<tr>
<td>60-79.9</td>
<td>11%</td>
</tr>
<tr>
<td>80-89.9</td>
<td>4%</td>
</tr>
<tr>
<td>90-100</td>
<td>3%</td>
</tr>
</tbody>
</table>

Source: U.S. Department of Labor, Federal Reserve System and Wells Fargo Securities

But there is a factor that could reduce debt-at-risk for student loans, as there was in the case of mortgages. That is, more than 90% of student loans have been originated by the federal government, and income-based strategies have become a more prevalent feature among federal student loans. So an individual who loses his or her job could remain current on their payments by making a lower (income-based) payment.

**Auto Loans: More Widely Held**

Auto loans comprise the next largest share of debt outstanding. Among the lowest income households, who are more likely to use public transportation, only 13.5% had an auto loan in 2016. That share was roughly twice as large (26.9%) for the second-from-the-bottom cohort. In all other income groups, the share of households with auto loans was 38% or higher. Perhaps because automobile ownership is a privilege of income and because higher quality vehicles cost more money, more than 75% of auto debt is held by the top 60% of households.

A sustained downturn in the labor market, which prevented currently displaced workers from returning to their jobs for a prolonged period, could lead to credit losses among auto loans. Our analysis finds that debt-at-risk in this sector totals roughly $80 billion or about 6% of loans outstanding in this category (Figure 4). Even though the lowest income households are less likely to have an auto loan, this group has the highest share of debt-at-risk (almost 30% according to our estimates) with the rest of the debt-at-risk roughly split across the other income cohorts.

**Credit Cards: The Most Widely Held and Most Evenly Distributed**

Among income groups, credit cards are apparently the great equalizer in the U.S. economy. More households report having credit card debt than any other category, except for mortgages. That observation generally holds for each income group individually. Furthermore, the dollar value of credit card debt is more evenly allocated across income groups as well. That said, with 30% of
households in the lowest income cohort holding credit card debt, this category of debt is vulnerable to credit losses if lower-paid workers remain unemployed for an extended period of time. We estimate that credit card debt-at-risk from a sustained downturn in the labor market stands at roughly $50 billion, which is equivalent to about 6% of overall credit card loans outstanding (Figure 4).

**What Would a Worst-Case Scenario Look Like?**

The impact to various categories of household debt in our analysis thus far is predicated upon the notion that the share of debt exposure among those who lost their jobs is statistically representative of the broader category. For example, 13.3% of households in the bottom quintile have a mortgage, and our analysis assumes a similar proportion among those who lost their job. But what if the all the people who lost their job happened to be among that 13.3% who have a mortgage? Obviously, the downside would be much worse.

So in our worst-case scenario version of this exercise, the results are far less benign than those described thus far. If the newly unemployed in each cohort are among the share of those in that respective category who had an outstanding loan, then the total exposure would sum to about $3.4 trillion, roughly four times greater than the amount we estimated in our base-case scenario. Approximately one quarter of all household debt outstanding would be at risk.

In terms of the various sub-categories, student loans and “other” loans top the list in terms of the share of debt-at-risk in each category. Debt-at-risk for the “other” category is pushed higher by the large exposure of the top income group. Note that wealthy households carry a disproportionately large share of “other” debt. As noted previously, the risk of default here may be diminished relative to lower-income households to the extent that these wealthier households have assets that can liquidated to service debt. But there is no sugar-coating the finding that almost 40% of student loan debt would be at risk, a dollar figure approaching $600 billion. Roughly $300 billion of auto loans would be at risk as well, which represents just over a fifth of that category of debt. The dollar total for at-risk mortgages would amount to $2 trillion.

This worst-case scenario obviously would have the scope to be more of an existential threat to the financial system. Furthermore, the Federal Reserve currently holds close to $2 trillion of mortgage-backed securities (MBS). As we discussed in a recent report, the Fed could become insolvent, at least in a technical sense, if it were to experience significant credit losses. Although there likely would be few economic and financial implications resulting from a technical insolvency of the nation’s central bank, there could be potential political blowback for the Federal Reserve. Discussion of policy options is beyond the scope of this report, but we would expect policymakers to cobble together some combination of deferred payments, loan forgiveness and outright payments as they did earlier in the crisis to ameliorate stresses on the financial system resulting from any worst-case scenario.

**Conclusion**

The labor market cratered in March and April, and payrolls today remain 8% below their February peak. Most of the lost jobs were in low-paying industries. Under our base-case scenario in which those displaced workers remain unemployed for a long stretch, we find that household debt-at-risk totals roughly $800 billion. During the financial crisis of a decade ago, American financial institutions wrote down more than $1.2 trillion worth of debt. Not only is the financial sector about 50% larger than it was in 2008, but it is also better capitalized today. Losses on the order of $800 billion, should they come to pass, would be disruptive but they likely would not lead to an implosion of the U.S. financial system, in our view. Under a worst-case scenario, total household debt-at-risk balloons to more than $3 trillion, which would represent more of an existential risk to the financial system. But we suspect under such a scenario the government would provide some sort of policy support to reduce the risk of an outright implosion of the financial system.
APPENDIX

Our goal in this report was to analyze outstanding household debt in the context of stagnant payroll growth to gauge how much household debt could be at risk if workers are unemployed for long periods of time. Unfortunately, we are unaware of a source that aggregates household debt held by job function, which therefore required us to rely on a few different data sources to aggregate the data ourselves.

A good starting point for aggregate household debt is the Federal Reserve’s Flow of Funds (FoF) report, which has the merit of being updated through Q1-2020 and the added benefit of providing a way to compare debt by income category. The drawback to the FoF data, however, is that categories of debt are not very granular. For example, consumer credit is not broken out by auto, credit card or student loan debt. Granularity is important for our analysis, with student loan debt the clearest example due to its exponential growth.

A more comprehensive breakdown offered by the Federal Reserve is its Survey of Consumer Finance (SCF) report. But with an update schedule of just once every three years, its latest update is currently 2016. A third option is to use data prepared by the Federal Reserve Bank of New York, which prepares a quarterly Household Debt and Credit (HHD&C) report. The HHD&C report offers both granularity and it is updated quarterly without much of a lag; but not however by income category. We essentially combined these measures using the FoF as a starting point, the SCF for details on debt held by income cohort and the HHD&C to guide our estimates for where various categories should be today. Thus, drawing on a few different data sources we used the following methodology for our analysis.

Because we wanted to assess holders of household debt in the context of job losses, we started by developing income cohorts based on private-sector employment industries. To do this, we pulled 75 private-sector industries based on the three- or two-digit NAICS industry code, which together make up roughly 96.5% of total private-industry employment. We first ranked the 75 industries by their 2019 average weekly earnings (AWE), to account for both hourly pay and typical hours worked in each industry. We then calculated each industry’s share of total labor market earnings (calculated by multiplying each industries 2019 AWE by 2019 employment and then taking the product as a share of the total private-industry labor market earnings) and then separated the industries into income cohorts. For example, the top 12.5% of total labor market earnings based on 2019 AWE comprises the 90-100 income cohort in our analysis.

We developed six income cohorts. The bottom four cohorts are quintiles (i.e., roughly 0% to 19.9%, 20% to 39.9%, 40% to 59.9% and 60% to 79.9%). The top quintile is split in half, such that the top income cohorts are deciles (80%-89.9% and 90%-100%). Our decision to split the top group reflect the fact that ultra-high earners have debt levels that are disproportionately large. Table 1 provides a detailed list of the industries included in each of our income cohorts.

After we determined our income cohorts, we then turned to the SCF, specifically Table 13 16 Alt and Table 13 16 Alt means, which breaks out family holdings of debt by cohort of income in both percentage of families holding debt (Table 13 16 Alt) and the average value of the debt holdings (Table 13 16 Alt means). Because this report is published every three years, we must rely on data from 2016 for purposes of this analysis. Surely, household debt has grown since 2016—according to the New York Fed’s Q2-2020 HHD&C, total household debt is about 13% higher as of Q2-2020 compared to Q4-2016. So for purposes of our analysis we started with the 2016 data, and then extrapolated the debt categories for each income cohort to 2020 by overall growth rates since 2016.

We assume that the percentage of households holding a specific category of debt in 2020 was the same as in 2020 as was reported in the 2016 SCF. For example, 13.3% of the lowest income cohort held a mortgage secured by its primary residence in 2016 with an average value of the holding at approximately $78K. Our lowest income cohort totals 47.7 million workers as of February 2020. So we assumed that 13.3% of these workers held a mortgage, at roughly $78K. Because total mortgage debt grew by about 15% from Q4-2016 to Q2-2020, we then extrapolated out to an estimate of $570 billion held by the bottom cohort in 2020.
To estimate how much outstanding debt is exposed to job losses, we then developed base-case and worst-case scenarios. The base-case scenario calculated the jobs lost from the pre-virus peak in February 2020 to the most recent data available in July for each of our income cohorts. For example, we estimate that there are about seven million workers in the lowest income cohort that have not yet returned to work. We assume that 13.3% of these individuals have a mortgage that is valued at $78K, which we then grossed up by 15% to account for the growth in overall mortgage debt between 2016 and 2020. This gives us an estimate of roughly $84 billion in mortgage debt that is held by unemployed worker in the lowest income cohort. We performed similar calculations for the other five income cohorts and for the other categories of debt.

Our worst-case scenario followed the same methodology, with one exception. Instead of keeping the share of each debt category held for each cohort constant to their 2016 values, we assume all workers who lost their jobs were the ones holding the debt in each category and cohort. That is, all unemployed workers happen to have the average level of debt by category and income cohort.

Our goal was to come up with rough, not precise, estimates of exposure, and we readily acknowledge some limitations regarding our analysis. First, we acknowledge that using AWE as our earnings estimate for industry ranking masks both high- and low-paying positions within a given industry. But we believe that using AWE across a detailed level of industries provides a reasonable look at how job loss stacks up across total labor market earnings. Second, by using the number of workers in our estimate of labor market earnings, we are comparing “workers” to “families” or “households” when it comes to debt holdings. We acknowledge this misgiving in our analysis, but are not aware of a better alternative. Finally, it is possible, and actually quite likely, that the shares of debt outstanding held by each cohort have shifted since 2016, but for lack of additional data, we have relied on keeping the proportions constant for purposes of our analysis.

Table 1

<table>
<thead>
<tr>
<th>Income Cohorts</th>
<th>Percent of 2019 Labor Market Earnings</th>
</tr>
</thead>
<tbody>
<tr>
<td>90-100 Petroleum and coal products (324), Oil and gas extraction (214), Utilities (22), Support activities for mining (213), Data processing, hosting and related services (518), Publishing industries, except Internet (511), Heavy and civil engineering construction (237), Professional and technical services (54)*.</td>
<td>12.54%</td>
</tr>
<tr>
<td>80-89.9 Professional and technical services (54)*, Mining, except oil and gas (212), Other information services (519), Telecommunications (517).</td>
<td>7.84%</td>
</tr>
<tr>
<td>60-79.9 Electronic markets and agents and brokers (445), Hospitals (622), Transportation equipment (336), Insurance carriers and related activities (544), Management of companies and enterprises (55), Construction of buildings (236), Specialty trade contractors (238).</td>
<td>21.73%</td>
</tr>
<tr>
<td>40-59.9 Broadcasting, except Internet (593), Chemicals (325), Durable goods (424), Primary metals (331), Air transportation (481), Waste management and remediation services (562), Computer and electronic products (334), Machinery (333), Nonmetallic mineral products (327), Logging (1133), Truck transportation (484), Paper and paper products (322), Credit intermediation and related activities (522), Nondurable goods (424), Fabricated metal products (332), Support activities for transportation (488), Electrical equipment and appliances (332).</td>
<td>17.11%</td>
</tr>
<tr>
<td>20-39.9 Ambulatory health care services (621), Electronics and appliance stores (443), Rental and leasing services (532), Plastics and rubber products (326), Repair and maintenance (811), Motor vehicle and parts dealers (441), Real estate (531), Miscellaneous durable goods manufacturing (339), Wood products (321), Food manufacturing (311), Motion picture and sound recording industries (322), Warehousing and storage (493), Framing and related support activities (243), Nonstore retailers (444), Furniture and related products (337), Textile mills (333), Membership associations and organizations (813), Couriers and messengers (492), Performing arts and spectator sports (711).</td>
<td>19.14%</td>
</tr>
<tr>
<td>Less than 20 Administrative and support services (56), Transit and ground passenger transportation (489), Apparel (313), Textile product mills (321), Building material and garden supply stores (444), Health and personal care stores (446), Furniture and home furnishings stores (444), Nursing and residential care facilities (623), Museums, historical sites, and similar institutions (712), Accommodation (721), Personal and laundry services (812), Social assistance (624), General merchandise stores (452), Miscellaneous store retailers (453), Food and beverage stores (443), Gasoline stations (447), Sporting goods, hobby, book, and music stores (451), Clothing and clothing accessories stores (448), Food services and drinking places (722), Amusements, gambling, and recreation (731).</td>
<td>21.64%</td>
</tr>
</tbody>
</table>

*We divided the professional and technical services (54) industry in half across the highest- and second-highest income cohorts.

Source: U.S. Department of Labor and Wells Fargo Securities
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