FEATURE ARTICLE: SUBPRIME LESSONS NOT LEARNED

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In the aftermath of the global financial crisis, lending conditions in the American mortgage market tightened significantly given that loose lending standards and the bundling of subprime mortgages were the main causes of the depth and breadth of the crisis' aftermath. Unfortunately, lessons have not been learned from the fall-out of the financial crisis, because similar issues are currently at play with regards to auto and student loan debt. Easy monetary policy conditions, government initiatives following the crisis, and the lack of regulatory reform in this lending market, are to blame for the dramatic increase in auto debt over the past several years. Despite the massive deleveraging of household balance sheets following the financial crisis, household debt levels have crept back up to pre-crisis highs.

Notwithstanding a relatively cosy economic climate in the US, with unemployment at just 4.7% at the end of March, consumer confidence relatively high, and debt-to-income ratios at 30-year lows, auto loan defaults among high risk borrowers are on the rise. The relatively strong economic conditions suggest that, simply, borrowers cannot afford their monthly repayments. Other risks are emerging that show that the pain could be widespread. New car sales are starting to slow after six consecutive years of strong growth. Used car prices are showing signs of weakness, translating to borrowers owing more on their auto loans than the underlying cars are worth. Increasing interest rates from the Federal Reserve is only going to make it more difficult for subprime borrowers to meet their repayment obligations.

Given that subprime auto loan debt are securitised in the same fashion as subprime mortgages were in the mid-2000s, the rising rate of delinquencies and defaults have been sending ripples through financial markets recently. Anxiety has been simmering over the risks in these two market segments, considering that the American economy is, in many ways, still feeling the effects from the subprime mortgage debt crisis.

In this month's feature article, we address the rapid expansion of auto loan debt in the United States. We discuss the current situation in terms of the volume of auto debt, as well as the factors responsible, including cheap credit and government incentives. We address the risks that are starting to emerge, including the rise in defaults and delinquencies and the falling prices, as well as the knock-on implications that weakness in the auto loan sector has for the subprime asset-backed securities (ABS) section of the market. We are of the view that the subprime auto market is unlikely to cause the same widespread destruction that the subprime mortgage market did, however, there could be considerable losses on a more contained basis at the investment and sector level.

1.1 The Current Situation

Following the bursting of the housing bubble in 2008, mortgage debt was reeled in, but was largely replaced with auto and student debt. From 2008 to 2016, housing debt decreased by $1.0 trillion, while student and auto loan debt increased by a combined $1.0 trillion. Households are dealing with just as much debt as before the financial crisis, however, the composition of the debt has changed.

Both the number of new auto loans and the value of such loans have increased over the past several years. This is not just the result of more expensive cars, but also because banks are willing to take on more risk, as seen by the increasing loan-to-value ratios of auto loans. The average amount financed for new car purchases has climbed significantly over the past several years. Additionally, the increase in the value of the loan has caused many borrowers to lengthen the terms of the loans, to ensure that the monthly payments are manageable.

The increase in the volume of auto loans, unfortunately, has not just been to low-risk lenders. The origination of auto loans has not faced the same crackdown that the mortgage lending market has faced, in that auto loans continue to be made to riskier borrowers at a relatively high rate. Nearly a quarter of all outstanding auto debt is subprime, while approximately 20% of newly originated loans are made to sub-prime borrowers. In the mortgage market, lending to subprime borrowers increased significantly in the lead-up to the financial crisis, but dropped off severely and has stayed low as increased scrutiny and a regulatory overhaul have tightened mortgage lending standards.

The increase in both the number and the size of auto loans has caused the total outstanding auto debt to have increased to $1.2 trillion by the end of 2016. Total auto debt increased by 9% over 2016 and by year-end was 48% higher than the 2010 low following the financial crisis. Additionally, the level of debt by 2016-year end was 13% higher than the pre-financial crisis peak of $1.0 trillion set in 2005.

1.1.1 Why Subprime?

While auto debt has increased across the credit score spectrum (prime to deep subprime), the worrying segment of the market is the growth in the volume of subprime and deep subprime debt. It has taken more than just low interest rates and changing consumer

preferences to increase the volume of subprime debt, as we discuss in the following paragraphs.

Auto Finance Companies

Three quarters of subprime auto loans come from auto finance companies, rather than more standard banks, which generally operate through car manufacturers or dealers. Such companies have a track record of attracting customers by guaranteeing loans to those with bad credit.

The currently profitable market has also encouraged new companies to join the lending space. According to Wells Fargo, in 2011 two big auto financing companies, Santander and AmeriCredit, dominated the market, making up 90% of Fitch's subprime auto ABS index. As of 2017, their combined presence in the index sits at just 52%. The other 48% is comprised of about 20 new subprime lenders who have gained market share in part because of the rising auto sales over the past five years, but also because of their relatively loose lending standards. Private equity firms often back such start-up auto finance companies, and they will often have extremely low underwriting standards as a way of gaining market share.

Looser regulatory framework has encouraged risk-taking

The financial crisis was in large part the result of excessive risk-taking by financial institutions when it came to subprime mortgage lending. In the aftermath of the financial crisis, mortgage regulations tightened significantly to prevent banks and credit intermediaries from writing loans without proper due diligence practices. Because auto lending has not yet gone through the same boom and bust cycle as mortgage lending did, the auto lending market is still rife with moral hazard and loose lending standards.

The lack of strict regulatory reform, paired with banks just generally being more comfortable with risk, has pushed lenders to lend amounts of money to borrowers that they simply cannot afford. This is shown in part through the increasing loan-to-value ratios, where in some cases, the loan amount is more than the value of the car. Lenders are incentivised to lend in this space because they can charge much higher interest rates on subprime loans, often as high as 10%, or even up to 20% in extreme scenarios.

Technological advances in the field of debt collection have also given lenders much more confidence when it comes to lending to riskier borrowers. 'Starter interrupt devices' are gadgets installed in cars that allow the lender to remotely disable the ignition if a borrower falls behind on their loan repayments. The devices are considered highly controversial, and in some cases dangerous, given that there have been cases where cars idling at stop lights have been disabled. While the drivers opt to have the devices installed in their vehicles, oftentimes, the alternative is not being able to buy a car at all. The devices have given peace of mind to lenders, who have amped up lending to riskier borrowers as a result. Additionally, such devices allow the banks to charge an even higher rate of interest, given that if the borrowers do not meet their payments, the cars can be apprehended by the bank.

Demand from Investors

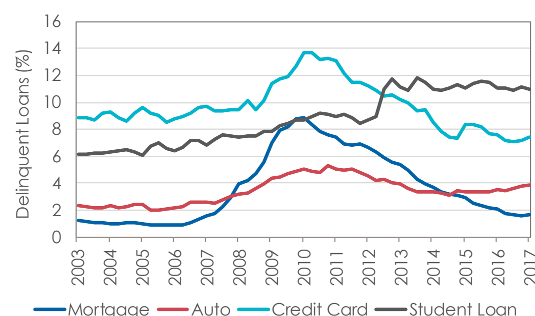
Auto finance companies bundle subprime car loans, turning them into asset-backed securities, and sell them to investors with the promise of a higher yield (given the higher rates of interest charged on subprime loans). Institutional investors have become increasingly attracted to the auto ABS market because of the attraction of this higher yield, given the otherwise low-yielding environment. Additionally, selling ABS' allow the lenders to divest the risk of the subprime loans to the investors, so combined with the increase in demand from investors, lenders have been able to issue loans to subprime borrowers at an increasingly higher rate.

1.2 Risks Emerging

The rise in auto debt has meant many profitable years for banks and those invested directly and indirectly in these markets. The volume of debt clearly indicates bubble territory. Most concerning however is that signs are indicating that there are risks bubbling just below the surface that could cause severe hardship for certain segments of the economy and financial markets, as well as for the borrowers.

According to data from the Federal Reserve Bank of New York, the portion of auto loans that are considered delinquent (at least three months late on payment) has increased to just shy of 4%, while the same rate for student loans is at a staggering 11%.

Chart 1: Percent of Loans that are 90 Days Delinquent, 2003 - 2017



Source: FRBNY, Whitehelm Advisers

The rise in auto debt delinquencies is at a time of relatively low interest rates and a labour market near full employment – optimal conditions for being able to pay off debts. Given this environment, it is clear that borrowers simply cannot afford the debt burden that they have taken on. This is not surprising given the increasingly popular fad of banks' lending to consumers with incredibly weak credit scores. We discuss this trend, as well as other causes for concern in the following section.

Falling Demand

After several consecutive years of strong vehicle sales, 2017 has had a much softer start, with the number of vehicles sold in each of the first four months of the year well below the high achieved at the end of 2016. The fall in vehicle sales is just one indicator pointing to a likely slowdown in the auto lending space, but one that has severe implications for automakers. Many of the auto-making giants have seen their share prices tumble so far this year, as the fall in car sales has missed expectations for most of these companies.

The slowdown in sales has left automakers with a larger supply of inventory than they would typically prefer. For example, in April, General Motors Co. had approximately 100 days of supply of inventory, well above its typical 70 days. As a result, the company has already scheduled approximately 13 weeks of downtime in which the car factories will be idle. The disappointing sales data comes despite an increase in incentives offered by automakers. According to J.D. Power, incentive spending has increased by 13% to $16.4 billion at the end of April from a year earlier. Falling auto sales but increasing incentives highlight the risks that the auto-making industry is exposed to.

Used Car Prices Falling

Leases, rather than outright purchases of automobiles, have become increasingly popular over the past several years, in large part because as the price of a new car has increased, monthly payments under a leasing contract are typically lower than those for an outright purchase. This is because the lessor does not need to pay the total amount required to purchase the car outright.

The popularity of leases has led to the used car market now being flooded with leased vehicles at the end of their terms. The oversupply of the used car market has caused used car prices to fall, which is fine for those in the market for a used car, but not for those who own one. For the latter group, falling used car prices could mean that they owe more on their car than the car is currently worth.

The increasing default rate is also a factor. We have already seen a rise in the delinquency rate and expect it to rise further as interest rates rise and balance sheets become more stretched. Delinquencies often mean that debt collectors will repossess vehicles, which will then be resold on the used car market. This exacerbates the oversupply issue, creating another headwind for used car prices.

Borrowers in Trouble

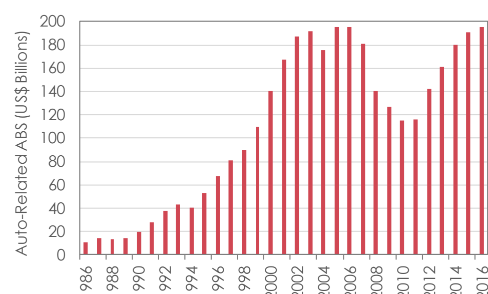
According to S&P Global Ratings, nearly one in five subprime borrowers are at least 60 days behind on their loan repayments, the highest the rate has been in six years. Concern has been raised regarding the underwriting standards that have been used by auto financing companies over the past decade given the current situation of the increasingly high volume of loans going into default status. Given that the US economic climate is quite strong, with low unemployment and low borrowing costs, the fact that borrowers are unable to meet their repayment requirements suggests that the borrowers have taken on much larger debt burdens than they can afford. While lenders were incentivised to lend to borrowers with low or no credit scores, it is becoming clear that the implications of increasing defaults are not worth the gain in market share through poor lending standards.

Also concerning for borrowers is the fall in the value of used cars, as we just described above. The fall in used car prices means that many Americans have negative equity in their cars, in that their cars are now worth less than the outstanding balance on their financing plans. This is a real cause for concern for such borrowers given that selling the car is not a viable option for freeing up cash flow if the borrowers get into financial trouble.

1.3 The Subprime ABS Market

Much like the bundling of subprime mortgages in the lead-up the financial crisis, subprime auto loans have been bundled and sold as securities to investors. Since the financial crisis, the volume of auto-related asset-backed securities has surged, to an outstanding balance of nearly $200 billion at the end of 2016, as shown in the chart below.

Chart 2: Volume of Auto-Related ABS', 1986 - 2016

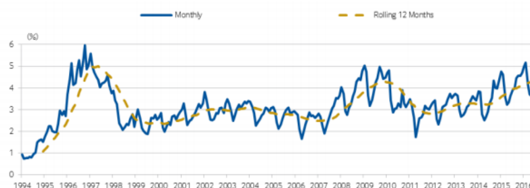


Source: SIFMA, Whitehelm Advisers

The majority of the auto loans that are being bundled into these securities are those made to subprime borrowers, with about a third of the loans being made to those considered 'deep subprime'. The securitisation market has moved increasingly toward the end of deep subprime, as in 2010, only 5.1% of the securitised subprime loans were considered deep subprime.

As we discussed in the previous section, borrowers are finding it increasingly difficult to meet their repayment obligations, seen by the increase in delinquencies and defaults. The auto loan deterioration is particularly noticeable in the auto-related ABS market given that it is primarily made up of loans to riskier borrowers, or those who are having more trouble making the repayments. Per Fitch's Subprime Auto Loan ABS 60+ Days Delinquency Index, the rise in delinquencies among subprime borrowers is being seen in the ABS market, per the chart below. According to data from Bloomberg, auto loan ABS delinquencies reached 4.7% in January 2017, the highest the rate has been since 2010. Even amid the depths of despair of the financial crisis, the rate only got as high as 5.4%, and the rate in normal conditions is typically between 2-3%.

Chart 3: Subprime Auto Loan ABS 60+ Days Delinquency Index



Source: Fitch

Asset-backed securities are structured in tranches, so that the highest tranches are the last to face any losses. Because of this structure, the highest tranches often have high credit ratings, despite the inherent risks when pressure mounts in the auto lending market. Because of the higher credit rating, such loans are often marketed to retail investors as being 'safe' investments, much like MBS' were pre-financial crisis.

Typically, the higher tranches are safe, however widespread pain would mean that even those at the highest tranches would not go unscathed. Consider an example. In November 2016, Skopos Financial securitised $154 million of subprime and deep-subprime auto loans, with Citigroup being the lead underwriter. Over three quarters of the loans were made to deep-subprime borrowers, a portion of which had no credit score at all. The highest tranche of this ABS was awarded a rating of AA from Kroll Bond Rating Agency and a rating of A from DBRS. Institutional investors invested in these top tranches because of the high credit ratings.

Three months later, the securities had faced sufficient defaults that they were approaching a 'cumulative net loss ratio trigger event' set by rating agency Kroll. If the losses were to reach such a level, Skopos would have to stop collecting excess cash flow and would have to redirect the money to bondholders. This would make it nearly impossible for Skopos to continue operating 'business as usual'. Given the deterioration of collateral quality in just three months, an example such as this one shows the risks that this segment of the market faces. More widespread difficulty in borrowers meeting their repayment obligations would likely see investors across the ABS spectrum affected.

Weakening Collateral, Different to Mortgages

It is important to differentiate between the risks at play with auto-related and mortgage-related ABS'. When subprime mortgages are bundled together and resold, the houses are used as the collateral, just as the cars are used as collateral when subprime auto loans are bundled together. When investors buy into a mortgage-related ABS, they trust the house and that it will likely keep its value or even gain value. Investors have faith in the houses in that if the borrower cannot meet its mortgage repayments, the house will get repossessed without having depreciated much, if at all. With cars however, as soon as a car gets driven off the lot, it starts depreciating, with no chance of regaining its value. Investing in auto-related ABS' requires trusting the borrowers, in that they will be able to make the repayments, even if the interest rate is upwards of 20%. If the lenders need to start repossessing the cars, it is very unlikely that it will be a profitable venture.

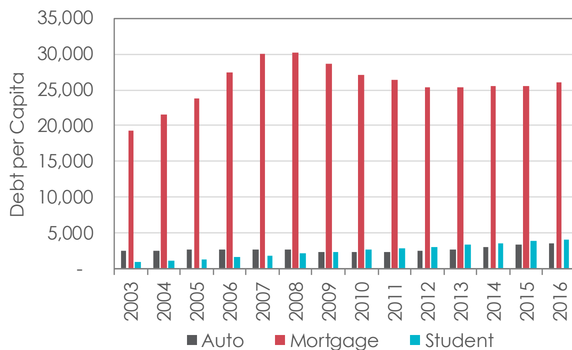
1.4 Could it be as bad as the financial crisis?

The issues that we have raised so far in this feature article point to several issues that are eerily similar to those that existed in the lead-up to the financial crisis. Debt is high, delinquencies are increasing, and lending in the subprime space is running rampant. So can we expect a similar outcome to that of the greatest recession since the Great Depression if defaults and delinquencies continue to climb?

We don't think so. First, subprime auto loans do not pose anywhere near the same magnitude of a problem as mortgages did. Mortgages dominated household balance sheets in the lead-up to the financial crisis (and still do for that matter), while auto loans play a much smaller role. Auto, student and mortgage debt per capita is presented in the

chart below, which shows the extent to which mortgage debt was and is much more cumbersome. The per capita figures were calculated using total auto, student and mortgage debt divided by the total US population. These figures are diluted by the fact that many within the US population do not own cars and houses – predominantly the country's youth.

Chart 4: Auto and Mortgage Debt per Capita, 2003 - 2016



Source: Federal Reserve Bank of St. Louis, New York Fed Consumer Credit Panel, Equifax, Whitehelm Advisers

At the onset of the financial crisis, the country had amassed nearly $10 trillion in mortgages, and approximately $7 trillion of it was securitised in some form. The US economy has amassed $1.2 trillion in auto debt, and only about $200 million of it has been securitised (as per the outstanding securitised collateral in Fitch's auto loan ABS indices). Finally, Americans have accumulated approximately $90 trillion of household wealth, so in comparison, the $300 billion of outstanding subprime auto loans seems relatively meagre. Additionally, the financial system is far less leveraged today than it was in the lead-up to the financial crisis, which would make it nimbler to react should this problem get worse. It is highly unlikely that even a sharp increase in debt defaults would be sufficient to take down the big banks, however it is more likely that certain segments of the financial markets and the broader economy will be affected.

1.4.1 Financial Markets

As pointed out in the last section, the subprime ABS market has become much more segmented over the past several years, as new, smaller auto finance companies have pushed their way into the market by undercutting the competition with their looser lending standards. These companies often have the backing of private equity firms, and often issue longer-term loans to borrowers with low credit scores in an effort to score higher returns.

The securitisation market is a primary source of funding for these auto finance companies, so as defaults continue to climb, auto ABS' will continue to face increasingly higher losses. As losses mount, investors will become wary of buying bonds issued by such companies, who are typically less diversified in terms of their sources of funding compared to the bigger banks. If funding dries up, the credit quality of the issuer itself could become impaired, which typically has knock-on implications, including the transmission of panic through the ABS market. In such market environments, doubt is cast on the quality of the entire auto ABS market, which raises the borrowing costs for both the issuers facing hardship as well as those who are issuing higher quality securities.

The worry of many is that the wariness of high yield bonds backed by car loans could easily spread through the broader junk bond market, which is then a catalyst for the pain to spread further. The junk bond market experienced serious headwinds in 2015 when demand for bonds in the market was very low, as borrowing costs were finally starting to rise and defaults accelerated. Weakness in the coal sector kicked off the pain in the junk bond market, but it quickly spread to the energy sector more broadly with the then falling oil prices, as well as the food, retail and telecommunications sector. Investors demanded a much greater premium from junk-rated bonds, as shown in the chart below. The junk bond market saw a massive outflow of capital, which is what many worry about with regards to the emerging weakness in the auto ABS market. The pain in the junk bond market throughout 2015 and into early 2016 was also paired with a sell-off in global share markets, driven in large part by emerging weakness in Chinese economic data.

Chart 5: US High Yield Spread over 10-Year Treasury, 2012 - 2017

Source: Bloomberg, Whitehelm Advisers

However, the way that many auto ABS' are structured will help to avoid a full-blown panic in the market. For example, some ABS' have high loss protection in place that ensures that senior bondholders will only be affected if 50% of the underlying loans were to go into default. Defaults and delinquencies would need to pick up significantly to impact most auto ABS investors.

It is also important to remember that the headline figure that is showing the large rise in delinquencies is hiding the fact that the rise in delinquencies is actually quite concentrated within the new players in the ABS space – those who lent to the riskiest of borrowers. These highly specialised lenders are the ones that are the most at risk, not only because of their reliance on the securitisation market for funding, but also because of their backing of private equity firms. Would private equity firms pull their support at the first sign of trouble?

1.4.2 Economic Implications

The rise in mortgage debt delinquencies in the lead up to the crisis was largely as a result of loose lending standards, followed by panic regarding the state of the MBS market and bank balance sheets. But the increase in mortgage debt delinquencies and defaults during the financial crisis was largely because of the economic conditions at play – unemployment had skyrocketed and business and consumer confidence plummeted. The state of the mortgage sector was indicative of the state of the economy, just as the state of the economy was indicative of the state of the mortgage sector.

In the case of the auto debt market currently, the rise in delinquencies and defaults has come despite relatively strong economic conditions, which highlights that the trouble in these debt markets is a function of the markets themselves, rather than the broader economy. Moral hazard, loose borrowing conditions and cheap credit are the source of the increasing risks, not more significant issues with the overall economy. Nevertheless, the rise in debt over the past decade, particularly given the focus on auto debt, will have implications for the broader economy.

Automotive Industry

The automotive industry is a key part of the American economy, it has been for the past century. It accounts for approximately 3% of the country's GDP and automakers and auto parts suppliers employ more people than any other manufacturing sector. It is estimated that approximately one million Americans are employed either directly or indirectly by the automotive industry.

As we have discussed throughout this feature article, pain in the auto lending market, as well as higher interest rates and tighter lending conditions will have knock-on implications for the automotive industry. Already in 2017, we are seeing softening new car sales, despite production remaining high. Automakers will come under increasing pressure, and in many cases, will likely have to slow production, to match the falling demand.

In early January, Ford announced that it was cancelling plans for its $1.6 billion manufacturing plant in Mexico, but instead would spend $700 million in building a plant in Michigan. Donald Trump took credit for such a move, given his push for American corporations to shift manufacturing back to the United States. Only a few months later however, the company announced that it is cutting 10% of its salaried jobs (approximately 1,400 positions) in North America and Asia in an effort to boost its profits under current market conditions. US auto sales dropped by 4.7% in April from a year earlier, with Ford, Nissan, General Motors and Toyota all reporting losses over the month. If this trend continues, we can expect further restructuring and cost cutting in this sector.

Consumer Spending

Vehicle sales have exceeded all other consumer-related purchases over the past several years and are also the most significant contributor to economic growth since the financial crisis. The likely further increase in interest rates, and tightening in credit growth, paired with the rise in delinquencies and defaults will reduce the impact that this sector will have on the country's overall economic growth. Consumer spending will also be impacted.

Any material fall in new car sales, paired with a fall in new and used car prices increases the chance that borrowers will owe more on their car loans than it is actually worth. This has the effect of destroying household wealth, and hinders disposable income that could have been used more productively, on savings or investment. Essentially, consumers will be forced to cut any spending that is not considered essential, which will certainly create difficulty for the country's overall economic growth.

1.5 Conclusion

It is becoming increasingly obvious that risks are emerging regarding the increasingly obvious auto debt bubble. That said, we believe that the implications of the rising auto debt defaults will not cause anywhere near the same widespread pain as the subprime mortgage market did. First and foremost, the volume of debt in this market space is very small compared to the mortgage debt in the lead-up to the financial crisis. We are starting to see an increase in subprime debt delinquencies, but there would need to be an increase in prime debt delinquencies as well to set off a full-blown crisis in this space. We do not consider that likely unless there was a swift and significant increase in either interest rates or unemployment. Given that the Fed is on a very gradual interest rate increasing path and the economy is currently near full employment, we

do not deem either of those situations likely, although both are possible.

A more likely scenario is that the increase in subprime debt delinquencies and defaults will lead to very localised pain. Those invested in securities backed by subprime auto and student loan collateral could expect greater losses over the coming months and years. Automakers could expect downward pressure on new and used car sales, which will hurt company performance, and car owners could see their balance sheets get even more stretched. This issue is a moving beast in the United States, one that still has many ways in which it can play out, but also one that do we not consider to be of great concern to Australian superannuation funds.

This feature article is a condensed version of a more in-depth article. If you are interested in accessing the longer-form version, contact Nicole McMillan at Nicole.McMillan@WhitehelmCapital.com.

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