Credit Research Initiative
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European auto manufacturers' credit health skids as the Ukraine-Russia war steers them to another supply chain crisis

by Elaine Stella Uy & Amrita Parab

- **NUS-CRI Agg Forward 1-year PD showcases continued worsening of credit health for European auto manufacturers owing to production woes and profitability concerns**
- **The supply chain disruption due to the Ukraine-Russia war would likely cause the resurgence of the semiconductor chip shortage that has plagued the automotive industry in the past**

The fallout of the Ukraine-Russia crisis threatens to magnify the impact of the global shortage of semiconductor chips on the European auto manufacturers' operations, which has plagued the industry since the first half of 2021. The NUS-CRI Agg (median) 1-year PD (Agg PD) in Figure 1a shows the increase in credit risk due to supply chain issues that affected the production and revenue-generating capabilities of European auto manufacturers. Disruptions in the manufacturing and supplier operations, coupled with price hikes in essential raw materials by as much as 20% in 2021, further reinforce profitability concerns[1]. The collective effect of the supply chain issues can be observed in the steep increase in the credit risk of the European auto manufacturers with substantial exposure to Ukraine and Russia when the war began (Figure 1a). The NUS-CRI Forward 1-year PD[2] (Forward PD) in Figure 1b shows that the heightened deterioration in credit health would continue, especially in the next 12 months, until the lagged impact of interventions to address the supply chain disruptions are realized.

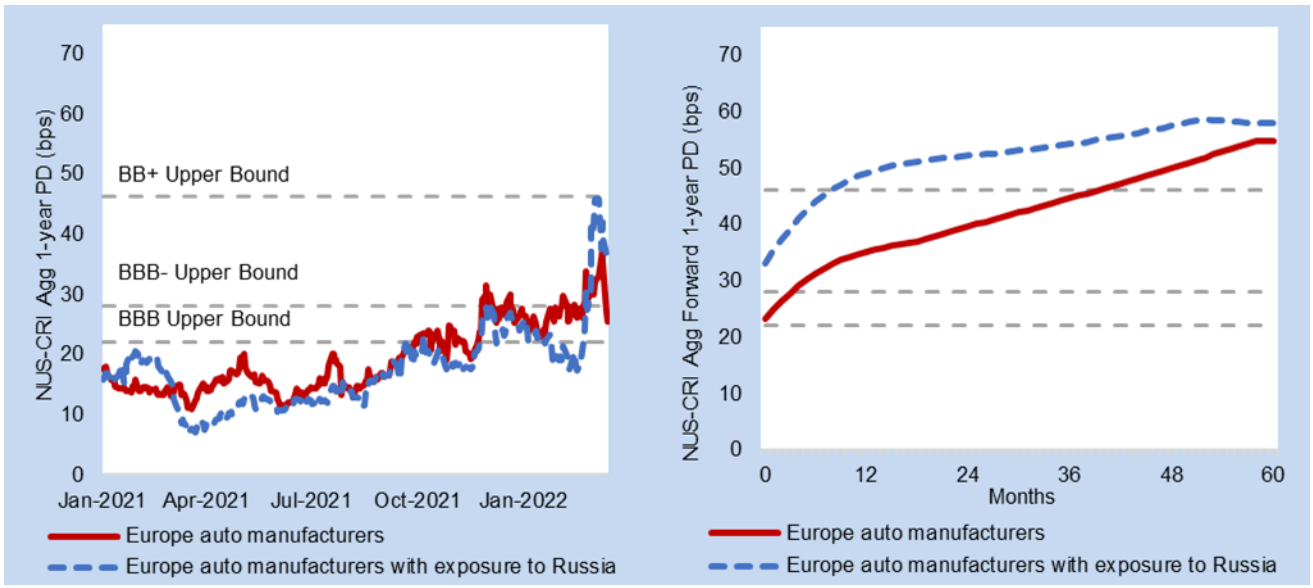

Figure 1a (LHS): NUS-CRI Agg 1-year PD for European auto manufacturers with disclosed exposure to Russia compared to the entire population of European auto manufacturers from Jan-2021 to Mar-2022 with reference to PDiR2.0 bounds[3]. Figure 1b (RHS): NUS-CRI Agg Forward 1-year PD for European auto manufacturers with disclosed exposure to Russia compared to the entire population of European auto manufacturers as of Mar-2022. *Source: NUS-CRI*

[1] Since the European auto manufacturers contribute a material portion to exports (33.7% in 2021), these sector-specific disruptions could also potentially result in export losses.
[2] The Forward PD estimates the credit risk of a company in a future period, which can be interpreted similarly to a forward interest rate. For example, the 6-month Forward 1-year PD is the probability that the firm defaults during the period from 6 months onwards to 18 months – this is conditional on the firm's survival in the next 6 months.
[3] The Probability of Default implied Rating version 2.0 (PDiR2.0) provides a more familiar interpretation through mapping the NUS-CRI 1-year PDs to the S&P letter grades. The method targets S&P's historical credit rating migration experience exhibited by its global corporate rating pool instead of relying solely on the reported default rates.

The ongoing war hurled a series of challenges on auto manufacturers necessitating the shutdown of critical[4] assembly plants and factories within the conflict areas, further slowing down production and reducing output volumes. Moreover, the geographical concentration of auto parts suppliers in Ukraine[5] exposes the vulnerability of European auto manufacturers to another supply shortage. Stoppage in the operations of major suppliers of essential auto parts leaves European auto manufacturers scrambling for alternatives to temporarily buoy production lines, especially as pent-up demand from the pandemic continues to drive shortages in global markets. However, as these parts are usually bespoke and specific to the contracting counterparty, sourcing replacements in a short period of time might prove difficult. The sector had faced a similar supply crisis in 2021 with the chip crunch that either stopped or reduced production. Furthermore, even as some suppliers have attempted to restart operations, they are being met with logistical challenges such as shortage of truck drivers[6] to transport finished products, stalling inventory and hindering the realization of profits.

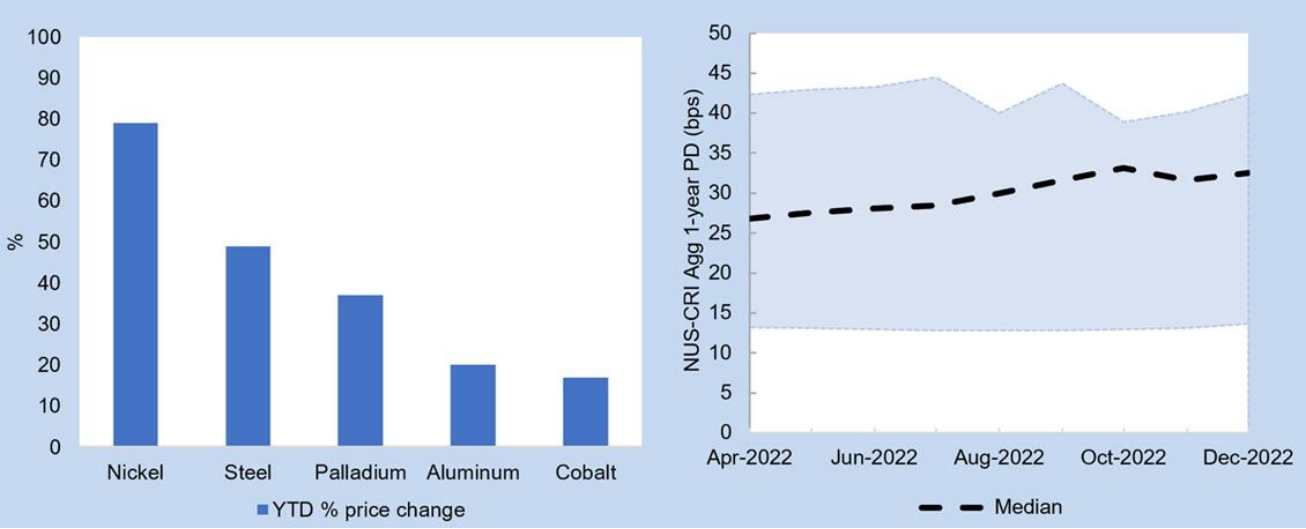

Figure 2a (LHS): YTD % change in price[7] of nickel, steel, palladium, aluminum, and cobalt, which are essential raw materials for auto manufacturing. Figure 2b (RHS): NUS-CRI Agg 1-year PD (median and interquartile range) of European auto manufacturers stressed against CPI inflation and prices of steel, aluminum, and nickel. *Source: Bloomberg, BuDA v3.3.0*

Additionally, the majority of raw materials used in the fabrication of key auto parts are primarily sourced from Russia[8]. With sanctions curtailing the ability of Russian companies to export, prices have risen steeply as shown in Figure 2a, translating to higher input costs and effectively slashing profits. In the face of rising raw material prices, stress tests can be conducted using NUS-CRI's Bottom-Up Default Analysis toolkit (BuDA[9]) (See Figure 2b). The stress tests demonstrate that the credit risk for European auto manufacturers marginally increases under the stress test scenario where commodity prices are sustained at a marginal growth of 1% MoM till Dec-2022. The median credit risk of the industry converges on to the risk felt by the most vulnerable firms in the industry, highlighting the deterioration of overall credit quality of the industry, whereas non-vulnerable firms remain relatively immune to the worsening environment, possibly due to strong and diversified supply chains. Meanwhile, European auto manufacturers, including those with material exposures to Russia, have refused to do future business with Russia indefinitely, trimming their international market[10]. The simultaneous shocks in production capacity and cost inflation severely threaten the operation and revenue generation of these European auto manufacturers, posing challenges to their liquidity and credit health. In fact, bond yields for Renault SA, which has substantial exposure to the Russian market[11], have started escalating, signaling that the market has recognized the resulting increase in credit risk into the firm's cost of borrowing.

[4] Assembly plants are model-specific, thus closure would materially cut down production output per vehicle type.
[5] Ukraine's lower labor cost and proximity to European assembling plants hailed it as a manufacturing hub of wirings and electronic components. In 2019, machine parts, including wiring sets, composed 9.1% of Ukraine's total exports, with Europe being its primary trade partner consuming 74%.
[6] The conscription order requires male Ukrainians to join the war, seizing a significant portion of the workforce responsible for production and subsequent transportation of finished goods.
[7] Spot prices on the basis of LME Nickel (USD/metric ton), North Europe Steel Hot rolled coil (EUR/metric ton), Palladium spot (USD/troy ounce), LME Aluminum spot (USD/metric ton) and LME Cobalt (USD/metric ton).
[8] Russia extracts 40%, 8%, and 4% of the global supply of palladium, nickel, and cobalt, respectively, which are fundamental in the production of parts pertaining to exhaust emission controls, batteries, and other electronics.
[9] The Bottom-up Default Analysis (BuDA v3.3.0) is a credit stress testing and scenario analysis toolkit jointly developed by the Credit Research Initiative (CRI) team of National University of Singapore (NUS) and the International Monetary Fund (IMF).
[10] As of 2021, Russia imports 3.3% of cars and auto parts from Europe.
[11] Based on the volume of car and light commercial vehicles sold in Russia in 2021.

In the medium-term, the Ukraine-Russia war could trigger another wave of supply issues[12] worsening the global semiconductor shortage, considering the likely causal relationship of both events. The impact is expected to be more severe for European auto manufacturers who would have still been reeling from the effects of the war as shown by their relatively higher future credit risk in Figure 1b. Moreover, since the demand has shifted to electric vehicles[13] which are more reliant on chips, profits from the momentum of the demand will most likely be forgone. Because of the further shrinking of margins, Forward PD could potentially flex upwards in adjustment to indicate accelerated deterioration of credit health.

[12] Semiconductor manufacturers such as those in the US, Taiwan, Korea, China, and Germany, rely heavily on Ukraine and Russia to supply neon gas and other chemical compounds which are used to make chips.
[13] For 2021, sales for electric vehicles in the European Union increased by 66.8% compared to 2020 following Europe's thrust towards clean energy, and in response to tightened emission regulations.

Credit News

Russian debt default fears stalk bond markets

Mar 21. A wave of Russian debt defaults may be imminent as Russia tightens its control over the country's financial system. Firstly, about half of dollar and euro-denominated bonds issued by Russia are held by foreign investors and may have seen a deterioration in value following the escalation of the Russia-Ukraine conflict. Meanwhile, international investors also held about 20% of USD 38bn outstanding ruble-denominated sovereign debt. The dollar value of this ruble-denominated debt is also estimated to be significantly affected by the collapse of the Ruble. Furthermore, with a notional net outstanding amount of USD 6bn, Russian credit default swaps are also experiencing huge uncertainty due to market dysfunction. The main concern from the market is that Russian CDS won't guarantee investors will be repaid if Russia defaults on debt. If debt contracts allow Russia to repay in Rubles, messy legal battles can be expected. (FT)

U.S. companies and governments are hesitating to sell bonds now

Mar 16. Soaring interest rates resulting from expected rate hikes and stagflation concerns have already slowed down the credit expansion across the US economy. For example, only USD 6bn state and local governments bonds have been issued this week, 17% lower than last year's level, and the trading volume also is down for this year. As for the ABS market, last week, two issuers postponed offerings and at least three borrowers decided not to announce deals. As seven interest hikes are commonly expected by the market, higher rates probably lead to falling excess spread and negatively affect the overall economics of recent deals, driving the inactivity in the market. (Bloomberg)

China credit investors find themselves at back of the line

Mar 18. Investors in China's USD 870bn worth offshore bonds are struggling to get paid as they find themselves far down the pecking order in the wake of a string of defaults that have hit corporate China. To recover their investment, the bondholders have resorted to backroom deals, unfavorable extensions, and payment delays. The real estate crisis has driven global investors away from China's corporate debt markets. Bloomberg estimates that holders of Chinese offshore debt have absorbed mark to market losses of USD 87bn since the crisis began in 2021. (Bloomberg)

Insurance industry braces for soaring payouts from war in Ukraine

Mar 17. The Russia-Ukraine crisis may result in high payouts by the global insurance industry as the war continues to pile stranded planes, damaged ships, bombed buildings, and unrecoverable debts. It is estimated that insurers will be hit with claims to the tune of billions of dollars, driven by the aviation sector which potentially faces its largest loss in history caused by scores of planes that have been grounded in Russia. The situation is exacerbated by Western sanctions which have cut Russian aviation and space sectors' access to insurance and reinsurance markets. In a bid to limit their exposure to the crisis, insurers have stopped entering into contracts that may potentially increase their exposure to losses from the Russian crisis and are in the process of rewriting policies to exclude Russia from future claims or hiking premiums. (FT)

Investors slow push into bank-loan funds

Mar 17. Investors have been piling into bank-loan funds since 2021, hoping that the floating rate funds will help them navigate the expected interest rate hikes by the Fed. However, a slowdown in the US economy driven by the escalation of the Russia-Ukraine crisis and an increase in energy prices has got investors questioning the Fed's commitment to the expected aggressive rate hikes. Resultantly, the investor interest in bank loan funds has waned, with the funds experiencing a slowdown in new investment for four straight weeks. (WSJ)

Petrobras bondholders wary as fuel price hike sparks backlash (Bloomberg)

Portugal sets up credit line for manufacturing, transport firms (Bloomberg)

China copper giant Xiangguang's creditors stop loan renewals (Bloomberg)

Regulatory Updates

Fed hawks seek half-point hikes with data 'screaming' action

Mar 18. The change in Fed's stance was highlighted last week, with the central bank officials supporting a faster tightening of policy. The majority of Federal Open Market Committee officials voted to hike the main policy rate within the range of 0.25% - 0.5% and have forecasted an increase in the policy rate to 1.75% - 2% till the end of 2022. The dot plot also underlined the inclination of a higher number of policymakers to raise rates at a faster pace. With majority policymakers in agreement, the Fed chair may find it easier to implement an aggressive policy action to tame inflation, which is currently at a 40-year high. However, the task at hand is a fine balancing act as a tightening slowly may drive inflation out of control while a faster tightening may agitate markets and may cause a recession. (Bloomberg)

Central banks weigh dangers of inflation and war 'shocks'

Mar 21. Since the beginning of 2022, bondholders were already trying to navigate record-high inflation rates a situation which was further worsened by the Russia-Ukraine war which caused inflation to soar beyond central bank targets. This has created a conundrum for central bankers as they try to tame inflation while keeping economic recovery intact. Thus far, major economies have emphasized their commitment to bringing inflation under control even in the face of the threat to recovery posed by the Russia-Ukraine war. Although US short-term bond yields which signal interest rate expectations have continued their upward trend, it is expected that in the face of the Russia-Ukraine crisis, the ECB and BOE may slow the pace of interest rate hikes. (FT)

China's banks keep lending rate unchanged amid easing calls (Bloomberg)

Five African central banks set to hike rates to subdue inflation (Bloomberg)

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