The Minsky Moment of Fallen Angels Risk

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Lawrence Habahbeh, Chair of the Resource & Environment MIG, and member of the COVID-19 action task force on Enterprise risk management and Investment impact for Life and Annuity Insurers, discusses the economic impacts of COVID-19 which demonstrate that, once again, Professor Hyman P. Minsky, who long argued that markets were crisis prone, is likely to be proved correct.

Introduction to COVID-19 global situation

On March 11 the World Health Organization (WHO) declared the Covid-19 outbreak a “pandemic”'. Since it was first diagnosed earlier this year, it has spread to over 200 countries, infecting more than 26 million people and claiming the lives of many thousands worldwide. The pandemic has caused an unprecedented worldwide economic shut-down, resulting in slower global economic growth.

According to some estimates they indicate the virus could reduce global economic growth by 4% in 2020, and raised the likelihood of a global economic recession similar in severity to that experienced during the Great Depression of the 1930s. Further, on June 10, 2020, the OECD published their economic outlook forecast and projected a global economic contraction by 6.0% to 7.6%, depending on whether there is a second wave of infections. Moreover, according to the World Trade Organization, Covid-19 represents an unprecedented disruption to the global economy and world trade with global production and consumption expected to fall by at least 18.5 % in 2020, depending on the depth and extent of the global economic downturn.

Economic impacts of COVID-19

The pandemic caused significant capital markets volatility, causing global equity markets to experience a fall by 30%-40% at the start of the pandemic, and leading certain markets to stop generating transactions, or the transactions became abnormally expensive (illiquid) as market participants demanded a higher risk premium to cover the potential losses that might arise from Covid-19 induced market stress. The crisis-induced stress conditions have been broadly felt across all asset classes such as stocks, corporate bonds, investment

funds, and others have all experienced sell-off. The COVID-19 induced market stress triggered both liquidity and solvency concerns in U.S., EU and rest of world.

The Global Corporate Bond Market and BBB – rated Bonds and Impact on insurance sector

Many insurers have material exposure to corporate bonds backing guarantees, notably annuities. According to a report published February 2020 by the OECD capital market series titled "Corporate Bond Market Trends, Emerging Risks and Monetary Policy", by the end of 2019, the global outstanding stock of non-financial corporate bonds reached an all time high of USD 13.2 trillion in real terms. It also notes that the overall stock of outstanding corporate bonds has lower overall credit quality compared to previous years.

Certainly, since 2017 the build-up of the higher-risk portions of the corporate debt market with BBB rated issuances have accounted for more than half of all investment grade issuances and stood at 52% in 2019 compared to only 17% in 2001. In European Economic Area (EEA) 51% of BBB rated bonds are held by funds and 32% are held by insurance companies. Moreover, 30% of outstanding BBB rated-bonds in the EEA, (50% in the U.S.), have been issued by non-financial corporations who are particularly sensitive to the ongoing economic consequences and restrictions induced by the pandemic.

According to the European Insurance and Occupational Pensions Authority (EIOPA) August, 2020 Risk Dashboard report, credit risk exposures of European Union insurance sector remains at a high level, as the risk of credit events persist going forward. Further, in May, 2020, 60% of the outstanding BBB rated non-financial corporate debt covering EU-27 and U.K. instruments were downgraded to negative outlook by the credit rating agencies.

As a consequence of COVID-19 induced market stress, and the potential for a second wave of the pandemic engulfing the world, the prospects of future rating downgrades, particularly from investment grade to high yield -called "Fallen Angel risk", as a result of projected slower global economic growth, leading to a decline in corporate revenues, and rising uncertainty in future earnings could impact BBB rated company's ability to service debt, leading to a potential increase in corporate defaults. Large-scale downgrades and defaults adds further pressure to insurance sector capital and liquidity profiles.

But it could be even worse.....

Introduction to CAT bonds Structures and Cash Flows

According to Artemis the global size of the Insurance linked security (ILS) market such as Catastrophe bonds (CAT Bonds), stood at USD 41 billion this year. CAT Bonds are event-linked bonds that help insurance companies add reserves (remove insurance risk) by buying reinsurance from another insurer and by selling risk in the form of an investment security through a special purpose vehicle (SPV). Investors in CAT bonds cover a wide array of institutional investors such as mutual and pension funds, hedge funds, international banks, life insurers, and reinsurers.

Further, they are similar to high yield corporate bonds: both earn a handsome excess yield, both experience the occasional loss, and they provide a further diversification attraction. Catastrophe risk tend to be uncorrelated to other capital market risks (e.g., interest rate risk, currency risk, equity risk, commodity risk, etc.), so by adding catastrophe risk to an investment portfolio, investors can reduce the overall risk profile of their entire investment portfolio and achieve a diversification premium.

The SPV created by the originator (sponsor) such as insurance, reinsurance, governments, or corporations, is a fully funded, bankruptcy remote entity, and highly likely domiciled in a jurisdiction with a favourable tax and regulatory environment such as Bermuda, Ireland or the Cayman Islands.

The SPV creates a collateral trust that is funded by the proceeds coming from investor's purchase of the CAT bonds issued by the SPV. In a typical CAT bond, the originator enters a reinsurance or financial contract with the SPV. The type of contract depends on a legal analysis of the risks being transferred.

Typically, if the transaction is indemnity based, then a traditional reinsurance contract is entered into between the originator and the SPV. If, on the other hand, the transaction is parametric or index based, the contract will be of a financial nature.

Most of the CAT bonds issued are non-indemnity based (parametric trigger, or industry-wide loss triggers). This makes the true value of the risk transferred to the reinsurer complicated to calculate.

The originator pays premiums to the SPV in order to purchase reinsurance protection. The entire SPV represents a reinsurance security and its function is to transform the reinsurance premium into risk linked securities sold to investors, with the sole purpose of covering particular catastrophic losses. If the specified catastrophic events do not occur, the SPV is obliged under the terms of the CAT bond contract to pay interest and principal to investors per the parameters set out in the bond contract. On the other hand, if the specified catastrophic events do occur, the CAT bond is obliged to pay losses under the contract, and not obliged to pay interest and principal to investors in whole or in part.

The SPV's obligations under the reinsurance or financial contract are collateralized by the proceeds from sale of the CAT bonds to investors. These funds are then invested in a trust or collateral account, whose underling asset structure is composed of high quality credit, and liquid assets (HQCLA). The types of assets that qualify as HQCLA are generally the subject of a consensus between the originator, the placement agent, and the rating agencies involved in structuring the bond.

The rate of return generated from the assets in the collateral account is swapped into a floating interest rate such as LIBOR with swap counterparty by adding or deducting a swap spread. The amount of the spread reflects the credit worthiness of the counterparty, the type of swap, and the credit quality and yield earned on the assets in the collateral fund. The sum of the Libor based rate of return plus the reinsurance premium paid by the originator to the SPV is transferred to investors as coupon to compensate investors for their investment in the CAT bonds.

The Inherent Risk Profile Of CAT Bond Structures

The dynamic risk profile inherent in the CAT bond structure and channels of risk transmission due to linkages to other parts of the whole financial system has three major drivers:

First; **the market and liquidity risks of assets held in the collateral accounts** that arise as a consequence of changes in the market value of the assets that will fluctuate based on the credit worthiness of the issuers of the collateral.

Second, the risks that arise from **collateral accounts credit risks,** such as the risk of outright default, or rating migration risk of the underlying issuers of the collateral assets, particularly if the collateral accounts are exposed, directly or indirectly to investment funds that have material exposure to BBB rated or high yield corporate bonds.

Lastly, the counterparty credit risks (Counterparty Credit risk: The market price of credit risk), that arise from financial linkages between the investors of the CAT bonds and the financial institutions who act as swappers of the cash flows generated from the fixed rate portion of the assets held in the collateral portfolio. The investors of CAT bonds are likely to use derivatives to hedge the market and credit risk of the cash flows generated by the collateral accounts using interest rate, foreign exchange and credit default swaps instruments.

Financial derivatives generate unexpected and sometime unnatural linkages between instruments and markets. Back in 2007 subprime credits were included in a number of CDO structures, along with corporate bonds and mortgages. The mixing of instruments leads to contagion in other markets.

The assets held in the collateral account are generating the excess yield, which is added to the premium paid by the originator to the SPV and passed to investors as handsome coupons and principal. These institutions might also be exposed directly or indirectly to the credit, market, and liquidity risks of corporate bonds on their balance sheets.

Moreover, the most important design feature in terms of assessing the risk and the valuation of CAT bonds is the trigger for payout. The trigger determines how cash flows are transferred to the originator from the SPV for losses incurred after a catastrophic event. Securitization products involve “model risk”. Extremely complex modelling and technologies are required in order to quantify the "true" risk of these contingent claim structures.

Hence, the quantification of the true risk of these structures depends on rigorous understanding and modelling of the various risk factors driving the risk processes causing the trigger events to be activated. Equally important the quantification of the sensitivities of the underling risk processes to small changes in the underlying risk factors to various changes in the conditions surrounding the risk processes. Likewise, the dependency (correlation) between the various risk factors driving the trigger events.

Many of the processes in life can be approximated using a bell shaped distribution. The bell shape indicates that the majority of outcomes or events will be concentrated in the centre and some events will happen away from the centre but with lower probability.

High impact, low probability events happen in the hidden part of the distribution, or what we call the tail or wing. Over the past several years, what we used to consider "rare, and extreme events”, manifesting in the hidden part of the "distribution"(the tail), is becoming more frequent and more probable and slowly moving to the centre of the distribution (or even changing the shape of the distribution), and it seems from very recent history, true extreme events, occurring in the new tail of the distribution, we are yet to experience.

This change in the rate, scale and range of disruptive weather-related events has a direct impact on the rate at which the triggers in the CAT bond structures gets activated. According to Swiss Re 2020 sigma report. Both the frequency and associated severity of economic losses from storms, floods and other extreme weather-related events have risen significantly over recent decades.

Moreover, according to estimates based on data from the Emergency Event Database of the Centre for Research on the Epidemiology of Disasters, recent research indicates that weather related disasters has risen threefold since 1980. More CAT bonds being triggered means increased probability of default of these bonds as the collateral is called upon in the current environment, and also it increases the associated severity of the effect of the catastrophic event in terms of expected and unexpected losses.

In other words, under the current climate change operating environment, a future 1-100 year loss may exceed today’s 1-1000 year loss. Consequently, the associated loss may more than double.

Therefore, for insurance sector firms whose capital requirements are materially dependent on extreme weather related catastrophic scenarios, the sensitivity of capital requirements to tail events is high (how much does the capital requirement changes as a result of small changes in the parameters and risk factors driving the underlying risk processes driving the trigger events), hence the cost and availability of insurance dynamically changes, impacting the probability of default of these CAT bonds.

CAT Bonds, and more generally risk linked securities may be being issued and bought disregarding the true risks inherent in the underlying structures and trigger events of the CAT bonds. Adding in the higher probability of default of these bonds in the current global environment leads to a build-up of risk in the whole financial system.

This is all driven by model uncertainty, the exposure of collateral accounts to corporate bonds and the associated credit, market and liquidity risks of the underlying assets of the collateral accounts. In addition to the financial linkages between the collateral accounts, investors, and the whole financial system, it could affect billions of dollars in high risk CAT bonds.

Under another excessive market stress scenario, we could experience a repeat of the sharp fall seen in asset prices around the time of the onset of the COVID-19 pandemic which was accompanied by significant redemptions from some investment funds and a deterioration in financial market liquidity.

This, in turn, added further pressure and exacerbated the risks of wide-spread downgrades and outright defaults in the corporate bond market. Under this market stress scenario, we could see rise in simultaneous corporate downgrades and defaults, particularly from fallen angels risk, which will have a second order effect through negatively impact the collateral accounts of the SPV's, who are exposed directly or indirectly to this risk, leading investors to experience total loss of principal and coupon on these investments, as well as the insurance protection.

Conclusion

Markets have been undergoing a prolonged period of bullish speculation in equity markets, driven by a prolonged period of rapid acceleration of debt taken on by retail, institutional investors, and governments. In addition, add to that the unprecedented fiscal, monetary, and other measures adopted by national governments, central banks, and international organisations to stabilise financial markets and stimulate growth due to the spread of the COVID-19 pandemic.

Further, the massive build-up of non-financial corporate bond debt since 2008, reaching an all-time high in 2019 of USD 13.5 trillion, and the massive growth in BBB rated bonds issuance since 2017 which have made up 52% of all new investment grade bond issuance.

For these reasons, and judging by today's market exuberance in the face of mounting economic, environmental, geopolitical and political risk triggers, Professor Minsky, once again, is likely to be proved correct. His "financial-instability hypothesis" is a plausible depiction of the state of affairs in global markets.

He taught that markets exhibit short memories, and that they repeatedly delude themselves into believing that this time will be different. The risks arising from a second COVID-19 induced market stress scenario, coupled with projected slower global economic growth, leading to further declines in corporate revenues, and rising uncertainty in future earnings, could negatively impact the corporate bond market, and in particular, the BBB rated company' ability to service debt, leading to a potential increase, and wide-spread corporate downgrades and defaults.

Large-scale downgrades and defaults induced by a second wave of the infection, longer lock-downs, weak supply chain recovery, poses a systemic risk to the insurance sector through their direct exposures to the corporate bond market, and their indirect exposures and financial linkages to other parts of the whole financial system through the collateral accounts of the SPV's of CAT bond structures, which according to Artemis has grown by a factor of three compared to the size of the CAT bond market a decade ago, and that has the potential to send the economy into a downward spiral by being the fuel that ignites a global insurance crisis, similar to the global financial crisis (GFC) that occurred between 2007-2009.

As a result, investors might become increasingly cautious of the risks these CAT bonds exhibit in the current operating environment and become restrictive in providing funding for the global CAT bond market. At that juncture, the rising risks of wide-spread economic contraction and fall in asset prices exacerbated by another wave of the pandemic or another shock event might lead to the Minsky moment for the insurance and reinsurance industry.