MILLIMAN WHITE PAPER

COVID-19: Trade credit insurance expectations

Mohamed Benkhalfa, IA

The COVID-19 pandemic represents the major worldwide health crisis of our time and the greatest global challenge in many years. Since its emergence in Asia in late 2019, the virus has affected life on every continent. In order to regulate the propagation, several containment measures have been implemented by national governments, leading to a steep and sudden downturn of the economy.

The health crisis has therefore expanded into an economic crisis despite the measures taken by countries and supranational organisations. According to the International Monetary Fund (IMF), the Gross Domestic Product (GDP) for advanced economies could drop by 6% in 2020, with significant differences among countries as shown in Figure 1.

In short, COVID-19 is already impacting global markets, with the Organisation for Economic Co-operation and Development (OECD) predicting it could be the "greatest danger to the global economy" in decades.

FIGURE 1: GDP ANNUAL EVOLUTION – IMF.ORG

		PROJECTIONS	
(real GDP, annual percent change)	2019	2020	2021
Advanced Economies	**1.7**	**-6.1**	**4.5**
United States	2.3	-5.9	4.7
Euro Area	1.2	-7.5	4.7
Germany	0.6	-7.0	5.2
France	1.3	-7.2	4.5
Italy	0.3	-9.1	4.8
Spain	2.0	-8.0	4.3
Japan	0.7	-5.2	3.0
United Kingdom	1.4	-6.5	4.0
Canada	1.6	-6.2	4.2
Other Advanced Economies	1.7	-4.6	4.5
Emerging Markets and Developing Economies	**3.7**	**-1.0**	**6.6**

Source : International Monetary Fund – April 2020
https://www.imf.org/en/Publications/WEO/Issues/2020/04/14/weo-april-2020

Consequences for insurance, especially credit risk insurance

Some Property and Casualty ('P&C') lines of business, such as motor insurance, have seen their claims experience improve due to the introduction of strict lockdown measures.

However, other lines could be negatively impacted, for example:

- Claims experience for business interruption, travel insurance, political risk, contingency, and professional liability covers is likely to worsen.
- For many lines premiums will decrease, such as for most professional liability activities, where premiums earning is mainly driven by policyholder turnover.

Trade Credit Insurance (TCI) is impacted adversely on both premiums and claims.

In this context, the market as a whole today is fully enlisted to face the crisis.

In the United States, the Federal Reserve (Fed) announced that it has taken a series of exceptional measures, amounting to USD 2.3 trillion, by adopting supportive programs and issuing loans intended for the most exposed companies and local governments.

The European Union (EU) is working on a budget proposal for the 2021-2027 period, including a fund to revive the European economy after the lockdown measures are lifted.

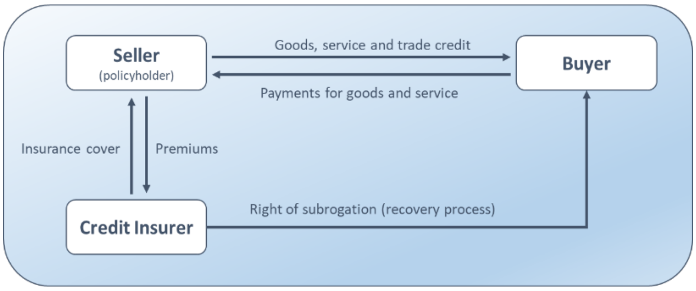
At the same time, P&C insurance players are taking measures to assist businesses in difficulties, for instance:

- The main credit insurers operating in France[1] announced additional inter-company credit covers under a strengthened system that benefits from public reinsurance up to EUR 10 billion for domestic TCI (covered by CCR[2]) and up to EUR 2 billion for export TCI (covered by Bpifrance)[3]. On that point, the French TCI market is seeking an additional government commitment of up to EUR 10 billion to 20 billion in public guarantees.
- In Bavaria, despite many contracts containing exclusions for pandemics, German insurers reached an agreement to cover 15% of the operating loss of their policyholders. In France, discussions on the establishment of a pandemic catastrophe insurance scheme covering business interruption are taking place.

Definition of trade credit insurance

TCI protects sellers against a buyer's non-payment of debt. The insurer will pay out a percentage of the outstanding debt (which usually ranges from 75% to 95% of the invoice amount). Trade transactions introduce a delay between the sellers' invoice and the payment for the product or service ("due date" period, typically three months). Moreover, most TCI policies include a "waiting period" after a bill is due before a policyholder can report a claim. So, it is expected that the first wave of COVID-19 trade credit claims will emerge by early summer and will carry on throughout the year.

FIGURE 2: TRADE CREDIT INSURANCE MECHANISM



Two types of claims are covered by TCI covers: the protracted default and the insolvency.

- The first one occurs on the non-payment of the whole or part of an invoice. The insurer could intercede to deliver cash to its policyholder in order to insure its cash position. The subrogation principle then implies that the initial debt belongs to the insurer, which will perform a recovery process to compensate its indemnity.
- The second event triggering the coverage is the insolvency of the buyer. Following an insolvency procedure, the insurer is potentially requested to cover the bad debts for all the policyholders for whom a limit on this buyer has been granted. The final cost is generally worse than in a protracted default case, as the loss given default (LGD) increases. Indeed, insolvency implies simultaneous debt recovery from multiple creditors. Depending on the ranking of the trade receivables, the remaining assets would not be sufficient in most cases.

[1] Atradius, Axa Assurcredit, Coface, Euler Hermes France and Groupama Assurance-credit & Caution

[2] Caisse Centrale de Réassurance - French state-owned reinsurance group

[3] https://www.economie.gouv.fr/lancement-dispositif-reassurance-publique-risques-assurance-credit

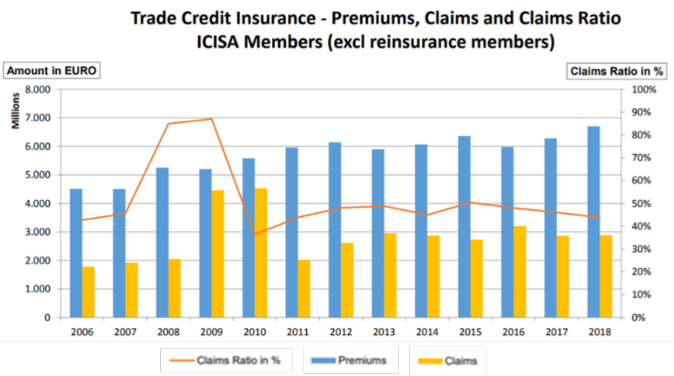
A specific risk

Trade credit risk has some particular features which makes it stand out in comparison with other P&C covers.

Its characteristics help us to understand the deep impact that a worldwide pandemic could raise for this kind of business.

The first topic relates to the underlying risk of this activity: Credit risk insurance relies on the financial health of companies. This is driven by the financial structure of each company (usually picked up through its credit risk scoring) but also by the state of the economy (systemic risk)4. Therefore, the risk is typically pro-cyclical, with each financial crisis generating a leveraged effect on the losses, as observed during the last 2007-2010 global financial crisis.

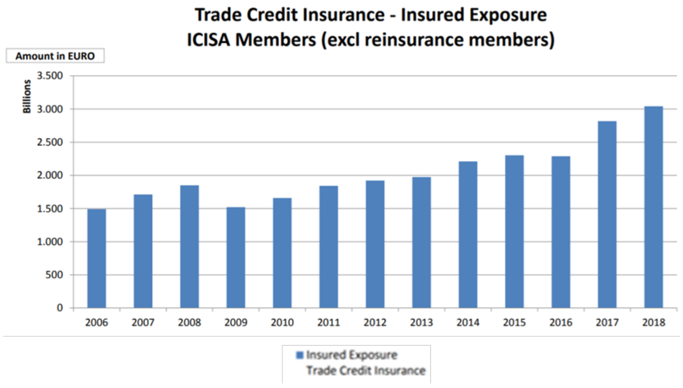
FIGURE 3: HISTORICAL TCI LOSS RATIO



Source: International Credit Insurance and Surety Association. Industries. Retrieved 22 April 2020 from https://www.icisa.org/industries/#trade-credit-insurance-statistics-tab

The second concern is the heavy level of exposure for the insurers. TCI covers provide coverage for their policyholders' commercial debts. This volume is contractually set up for every buyer through limits of exposure. The use of limits mainly depends on trade activity and its seasonality. The overall exposure for the insurer is therefore a moving risk factor and one of the most important measures of risk estimation.

FIGURE 4: INSURED EXPOSURE EVOLUTION



Source: International Credit Insurance and Surety Association.

Globalization refers to the process through which relations between nations have become interdependent and have gone beyond geographic boundaries. Trade globalization has led to worldwide global risk for TCI players. Meanwhile, geographical diversification is a key mechanism to mitigate local adverse situations and, as such, is usually a good way to mitigate risk. However, worldwide events such as the COVID-19 pandemic, coupled with globalization, create a substantial, unique concentration risk.

In respect of mitigation, TCI remains commonly a niche business where the insurers do not typically deliver any other kind of P&C protection. In contrast to a traditional insurer, which could compensate benefits and losses through different products (e.g., motor vs. operating loss), there is little business diversification for TCI players.

On TCI contracts, as with the main professional coverage contracts, the volume of premiums stands partially on the volume of underwriters' turnovers. Usually, contracts are based on the previous year's declaration of revenue: a minimum premium is collected and, at the end of the policy period, an adjustment5 based on the actual revenue declared by the policyholder is then applied. The current economic downturn will have a deep impact on 2020 earned premiums, as companies' turnover will decrease. The one year delay mechanism coupled with potential increased defaults of policyholders should also certainly impact the next 2021 TCI premiums collection.

[4] The reason why the catastrophic risk submodule of the Solvency II standard formula is specific on credit and suretyship lines of business (LOBs) is to catch the recession risk

[5] Earned premiums not written in accounting terms.

How management actions could help

The following section aims to suggest approaches to be considered by actuarial and risk management:

- **Short term:** Assessing the impact of COVID-19 on business profitability (measuring and forecasting).
- **Medium term:** Recent events could challenge the resilience of the existing modelling framework and could perhaps represent an opportunity to investigate alternative solutions (modelling and scoring).

MEASURING

Quantitative impact measurement methods can be implemented to produce sensitivities at a portfolio level by exploiting the maximum information available (macroeconomic, regulatory, portfolio structures, etc.).

The approach consists of measuring the impact of COVID-19 in terms of the loss deviations (i.e., increases in payment defaults) of the various buyers in the portfolio by considering several macroeconomic and portfolio-specific parameters and information, such as:

- Macroeconomic key performance indicators ('KPIs'), such as GDP, stock index, consumer index
- Econometric trends and projections
- Regulatory risk containment measures[6]
- Duration of confinement and resumption of activity
- Structural risk of the portfolio (buyers rating, geographic distribution, sectorial activity concentration)
- Management actions
- Portfolio experience

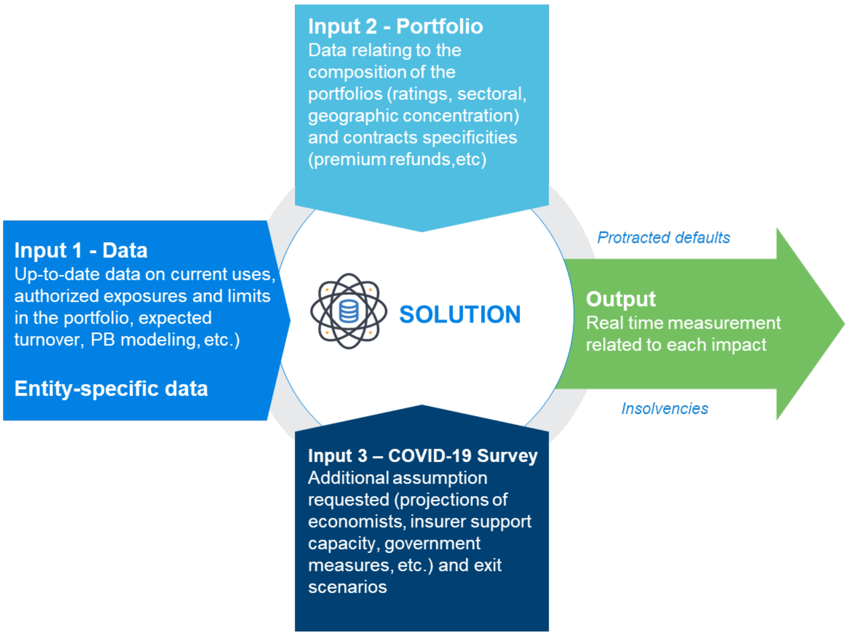
From an operational perspective, it primarily relies on the definition of the future scenarios and, secondly, on the translation of these scenarios to technical, financial, operational and commercial parameters (as displayed above).

The anticipated surge in TCI claims will likely be offset by the ability of insurance companies to mitigate their risk. The main management action will consist of cutting or reducing exposures/limits related to the most unsafe transactions. However, in the current context, some insurers fear that they will be engaged to retroactively cover situations for which they have explicitly excluded the risk—due to government incentive or legislative amendments.

Beyond calibration difficulties, one of the main challenges lies in the modelling framework used to assess the relation between the duration of lockdown measures7 and portfolio losses' adverse deviations (the link seems obviously not linear but rather exponential or quadratic).

Alongside the impact measurement exercise, there is an emergency need to set up a daily review of economics trends and expert estimates, allowing the most up-to-date assumptions and parameters to anticipate the evolution of the pandemic and adjust its impact on the portfolio loss ratio in real-time.

FIGURE 5: IMPACT MEASUREMENT



[6] FFA (10 April 2020). Les assureurs-crédits se mobilisent face à la crise. Retrieved 22 April 2020 from https://www.ffa-assurance.fr/actualites/les-assureurs-credits-se-mobilisent-face-la-crise

[7] The timing of economic activity resumption is also a key factor; China and Israel have gotten out and revived trade exchange while the horizon seems more distant and uncertain for Western Europe.

FORECASTING AS PART OF THE STRATEGIC PLAN REVIEW

In the short term, the re-forecast exercise appears extremely challenging. The main accounting items of the Profit and Loss statement appear more uncertain than ever before. As said above, the current gross of reinsurance loss ratio deterioration depends on several factors, related both to losses and turnover. The other significant accounting loss relates to the expenses and the ability to reduce overhead costs. Due to the sensitivity of credit risk business to the economy, the market will closely consider the financial KPIs.

Over the medium term, business plans should be updated to integrate revised assumptions. Establishing this strategic plan is quite challenging, as it relies on assumptions that are subject to high volatility: duration of the financial crisis, economic recovery policy efficiency, mean-reverting time horizon, and more.

In terms of solvency for example, the review of the strategic plan will certainly imply a significant decrease of the Solvency II coverage ratio, explained by:

- The increase of Best Estimate of Claims Reserves, and thus of the underlying risk volume for the NLR SCR[8].
- The negative impact on future premiums (although the decrease in volume may be balanced by premium rate increases), accompanied by an increase in the cover required by the policyholders.
- The reduction of eligible own funds to cover the SCR (decrease of the market value of assets, lower surplus level on technical provisions …).

The ORSA exercise, in consideration of the above, would probably require actions from the Insurer's Board in order to remain within their own definitions of solvency assessment and risk appetite.

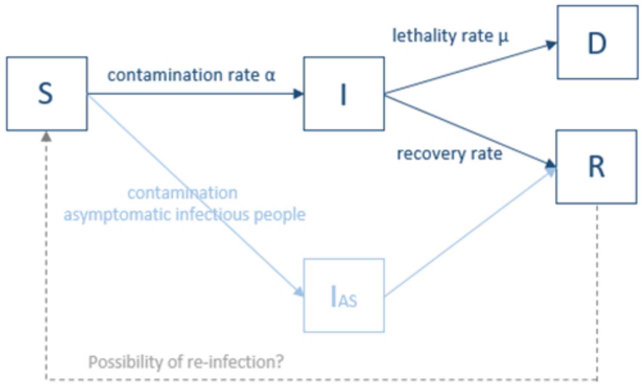
MODELLING

The main credit insurance players are endowed with stochastic credit risk models, which follow relevant standards and are suitable specifically for assessing their own Solvency II Capital Requirement ('SCR').

On the risk management side, one expectation could consist of modelling buyers' default contagion through pandemic models. On that side, it can be interesting to investigate and test different modelling solutions that could be transposed to credit default risk, such as:

- The susceptibles, infectious, and removed (SIR) types of models conventionally used for epidemics. They are compartmental models in which each type of population (usually denoted as susceptible, infectious or removed) interact with each other.[9] As for death rate modelling for health insurance, national entreprise defaults caused by the pandemic could be assessed and then translated to the insured portfolio.

FIGURE 6: SIR MODELLING FRAMEWORK



- The use of cyber risk models to reproduce autocorrelation between inter-arrival times. One adequate choice stands on the Hawkes self-exciting processes. In addition to autocorrelation, the Hawkes processes allow to take into account excitation effects, by making arrival rates of events depend on past events. This seems to make sense in the context of contagion risk, especially to model time leverage impact related to duration of financial activity resumption.

INTERNAL RATING

The risk of credit insurance business stands on the financial health of the buyers, who represent commercial partners of policyholders. The objective of the insurer is to build rating classes based on their knowledge of the creditworthiness of buyers.

The scoring of buyers is based on several variables such as corporate financial KPIs, industry, type of business (domestic vs. export) and/or external notations (e.g., S&P, Moody's)[10].

The specific rating of companies drives indicators related to the structural risk of portfolios. The recent events could raise questions about the discriminating power and robustness of existing models, especially regarding the resilience to emerging risks such as a worldwide pandemic.

This kind of bias could be reduced through clustering of companies' behavior on adverse scenarios and/or by downgrading the ratings assessed on central view.

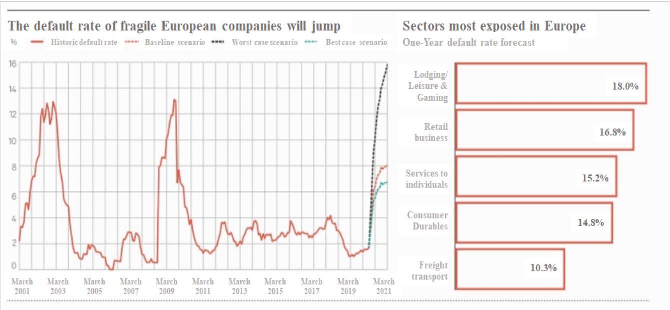
[8] Non-Life Reserve risk Solvency Capital Requirement

[9] See the Milliman white paper "Pandemic risk modelling: Example of COVID-19" by A. Boumezoued and E. Titon

[10] On that point, current events are so huge that the Banque de France has just decided to delay its 2020 corporate rating campaign, according to Les Echos, 16 April 2020

Rating agencies (S&P, Moody's ,Fitch) have reviewed their copy since the pandemic and raised their default rate forecasts, according to l' Agefi, 21 April 2020

FIGURE 7: SECTOR EXPOSED IN EU



Source: Moody's Investors Service

Perspective

WHAT COULD BE THE NEXT STEPS?

The black swan theory is a metaphor that describes an event that comes as a surprise, has a major effect, and is often inappropriately rationalized after the fact11. What about the lessons learned from the COVID-19 pandemic?

The frequency of pandemics has accelerated in recent years. We have known Ebola, Zika, SARS, avian influenza, etc. This (systemic) dynamic—potentially induced by our lifestyle (globalization, massive deforestation, climate change12)—is expected to continue and even accelerate.

As credit risk insurers are not far from the front line when such events occur, mitigation strategies and communications will become key elements in the future, especially on new, challenging management rules to cope with these emerging risks. Among TCI companies, the scenario of infectious diseases should therefore be emphasized in their analyses and management of risks.

Regarding public communication, all P&C insurers will certainly be called upon to define their roles and responsibilities. In the context of a pandemic, the insurance model is heavily challenged because its main pillar, the sharing of risks, is questioned. Could the TCI market nevertheless produce products or actions in order to deliver coverage in such cases? This question is far from being resolved.

Credit risk insurers may be well-positioned in a crisis to implement innovative risk management solutions:

- Further thinking about the definition of a particular financial health catastrophe and description of its characteristics, in the event that legislation is set up at a credit insurance association level. It may ease the wording of an explicit exclusions clause in forthcoming contracts. In parallel, setting up state-guaranteed reinsurance pools for credit insurance in case of financial catastrophe events (such as a reinsurance pool to cover natural catastrophes).
- Designing or adjusting specific provisions[13] to be booked during a pre-determined number of accounting years, and benefiting from an adequate tax regime.
- Mitigation vehicles—Recent events will probably generate specific needs related to reinsurance protections. The sensitive calibration of world-wide pandemics' return period is a key element in order to design and price these newest reinsurance products.

[11] N.N. Taleb discussed this theory regarding financial events: First, it is an outlier, as it lies outside regular expectations. Second, it carries an extreme 'impact'. Third, in spite of its outlier status, human nature makes us concoct explanations for its occurrence after the fact, making it explainable and predictable.

[12] "The frequency and diversity of disease outbreaks are expected to grow steadily." – World Economic Forum

[13] Such as « Provision d'égalisation » for credit insurance operations displayed on French insurance code, according to article R331-33

CONTACT

Mohamed Benkhalfa
mohamed.benkhalfa@milliman.com