Risks, Resilience and Performance of Financial Mechanisms During the Health Crisis

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Is there an "optimal resilience" model for organizations? Due to its status, the company is de facto concerned and regularly confronted with the constraints of the environments in which it operates. The latter are juxtaposed with regulatory, institutional and recently totally unprecedented health constraints. The antagonism of the « Risk/Return » couple on which financial theories are based is a model that has imposed itself in the terms of exchange between the bank and the company, thus resulting in a persistent informational asymmetry. But the repetition of financial shocks and the violent health crisis that occurred in January 2020 on a planetary scale forced the two parties to review their strategies. In this context, many systems have been put in place to enable organizations to stay on course. In particular, the loans guaranteed by the State distributed by the banks, which are at the same time active by the device and passive to bear the risk. Nevertheless, the banking sector has been able to develop in recent years a powerful architecture of operational resilience to fight against crises. What about the operational resilience model of companies that are suffering this double blow of external financial and health constraints for which they were not prepared? How these organizations were able to use financial devices for their profits. This is the analysis that is made under the triple report of effectiveness, efficiency and equity. Operational, theoretical and empirical resilience should also be analyzed. Theory to confront models of resilience. Empirical to analyze the reality of a given geographical area in order to identify a result. It emerges that the first « Toxi-Handler » (catalysts of their own suffering) are business leaders, a triple approach based on observation: individual, organization, means.

Keywords: resilience, dichotomy, benefit/risk, digital tools, vulnerability, trust

INTRODUCTION

Financial risk theories were originally based on the terms of trade under the profitability/risk duo. Companies were approached from two angles: profitability and limited risk. Financial institutions were willing to take risks with profitable, solid companies.

Nevertheless, with the succession of financial shocks and the instability of financial markets, financial crises have become almost permanent, prompting both parties (financial institutions and companies) to adopt new strategies. On the one hand, the financial sphere has equipped itself with powerful structures and armadas to prevent financial risks. These include Basel I, II and III agreements to manage, contain and anticipate risks, with the implementation of powerful control bodies. On the other hand, non-financial companies find themselves obliged to develop “organizational resilience [1]” in order to adapt to new market constraints. According to these authors, “organizational resilience” has three components: absorption capacity, renewal capacity and appropriation capacity.

Faced with market difficulties, banking constraints and legal, institutional and environmental standards, companies are called upon to define a new strategy for their development and survival. They need to embody a new vision, a new identity, under the concept of resilience.

The concept of resilience remains difficult to understand. The term, first borrowed from psychology, refers to “an individual’s ability to build and live satisfactorily despite traumatic circumstances”. Generally speaking, resilience is defined as “resistance to shocks”. Examples include: material resilience, temperature resilience, ecological resilience, computer resilience (the result of a system being able to function even in a degraded situation). From a legal standpoint, resilience means drawing up ethical charters to establish rules and guarantees between stakeholders. Another example is Law no. 2005-845 of July 26, 2005, which introduced a system for safeguarding businesses. This is a powerful legal instrument for insolvency proceedings, enabling the head of the company to retain his or her leadership role and keep the company in business.

From a macro-economic standpoint, resilience refers to the ability of a given economic zone to effectively and rapidly overcome disruption-related shocks. From a microeconomic perspective, resilience refers to the ability of companies to cope with systemic and idiosyncratic risks. According to Xavier Comtesse and Mathias Bailan, resilience must be integrated into all economic models, as it is linked to three phases: resistance + reset + recovery. Companies need to anticipate potential shocks in order to prepare for them and bounce back. That’s why the work carried out by Cicero (Centre d’ingénierie et de recherche en résilience organisationnelle), chaired by Gilles Teneau, on training, diversity, social ties, emotions, empathy, autonomy, benevolence and innovation, Toxi-Handlers” (resilience tutors) have provided key answers to help organizations face up to and reinvent themselves in the face of the violence engendered by successive crises, which are no longer exclusively economic or financial, but can originate from a wide range of factors, including health and the environment.

The issue at stake will be to demonstrate the extent to which companies are finding the necessary means to adapt in the face of a constrained banking context, a restricted environment marked by the rise of new risks, including that linked to the health crisis?

The latter has hit the global economy hard. It caused a shock on both the demand side (layoffs, reduced spending, etc.) and the supply side (inability to produce), forcing governments to take drastic measures to ensure economic stability, and then to stimulate the economy, by means of substantial financial support measures. The Insee report published in 2020 mentioned a study on “the impact of the health crisis on business activity and organization”. This study revealed that over 233,789 companies benefited from financial aid measures designed to boost economic activity. State-guaranteed loans (SGLs) alone amounted to over 646 million euros in Guadeloupe alone.

However, the health crisis has been replaced by the war in Ukraine, introducing a geo-political-economic crisis whose consequences on the world’s economies, and particularly on the French regional economy, are already having a major impact. This new crisis is taking on a more long-term dimension, with increasing corporate debt, rising inflation, product scarcity...

In this context, our article will first identify resilience factors, then analyze, describe and demonstrate how they have enabled companies to absorb shocks in a crisis context, and particularly from the health crisis to the geo-political-economic crisis. But also their ability to adapt to the constraints of the banking world, which is also a risk-bearing business. If companies have been able to demonstrate their ability to adapt, it’s also because they have been able to transform resilience factors into opportunities to bounce back. It’s the benefit/risk matrix that’s at the heart of our approach, just like the medical approach to treating a sick patient.

Beyond the theoretical approach, our approach requires a study of a few companies (TPE/PME, located in Guadeloupe) that have been able to develop resilience faculties to survive and grow.

In our first section, we present the differences and similarities between the risks faced by banks and companies, from the point of view of financial equilibrium and the apparent contrasts linked to notions of equity. In a second section, we will analyze the resilience factors of companies in crisis situations, both in terms of the notion of resilience gains and in terms of the triple dimension of effectiveness, efficiency and performance. Finally, Title III will focus on cases of so-called operational resilience and the results that flow from it: dual perception, digital elements, and the mathematical rationality of resilience.

DIFFERENCES AND SIMILARITIES BETWEEN BANKING AND CORPORATE RISKS

To approach the question of the relationship between banks and companies from the angle of a dichotomy is to consider that the interests between the stakeholders may be divergent, but also to demonstrate from what angle they may be convergent. In fact, the relationship is convergent and complementary in many respects. In addition to supplier-company financing relationships, the second main source of financing for companies is the banking sector, which has been able to put in place attractive offers on both the top end of the balance sheet: medium- and long-term loans, structured credit, investment credit; and the bottom end: short-term cash flow, mobilization of receivables, factoring, supplier guarantees, documentary credit - and the list goes on. But in addition to credit and financial support in the form of resources, banks also manage companies' cash surpluses through investments in short- and medium-term financial products or money-market investments, which are also abundantly available on the market. In fact, banks compete fiercely for their customers' cash flow.

Financial Equilibrium as a Common Ground

The banking sector therefore acts as a financial intermediary on the markets when companies do not provide for it themselves, by deploying debt securities, particularly for big companies, and by assuming counterparty risk.

"All other things being equal", the bank's approach to risk is adapted to the size of the company. The average amount of financing outstanding is naturally higher for large companies. On the other hand, small and medium-sized enterprises are larger in number, accounting for 99% of the French economy (source: INSEE). Their small size does not give them direct access to the financial market. As a result, they have to turn to banks for financing, especially when it comes to private equity transactions. This is a crucial issue for both parties, banks and companies, supported by the French government with the help of the Public Investment Bank (BPI), which provides additional financing and/or guarantees.

This hypothesis was borne out during the health crisis. Companies were faced with significant treasury difficulties, due to the sudden drop in their business, and it was for this reason that they turned to State Guaranteed Loans (SGLs) to regain financial equilibrium. Indeed, in the first year of the health crisis in January 2019, GDP fell by 4.9%.

By applying the following equation to the aggregates:

$$(1-0{,}049)Y = 0{,}952\ C_M + 0{,}905I + 1{,}009G + (0{,}653X - 0{,}875M)$$

The result is: Y= $\frac{-c_yTo+Co+I_rr+Io+\ Go}{(1-c_y+c_yt_y)}$

By deriving Y with respect to G we obtain the value of the public spending multiplier, which is:

$$Y_{/G} = 1{,}173$$

The public spending multiplier is greater than 1. In other words, by increasing government spending through the introduction of SGLs, the situation of businesses improves. Indeed, as overall income rises, this translates into an upturn in activity and growth. This explains the effectiveness of SGLs on company cash flow. Small businesses with constantly rising working capital requirements in times of crisis have resorted to this device as a resilient factor to keep them from going under.

The debt of SMEs has therefore risen significantly as a result of the consumption of these SGLs, which is not the case for big companies, which have a rather negative working capital requirement.

Moreover, the more developed the geographical area, the greater the recourse to borrowing (SGLs). As a result, the use of borrowing through the SGLs has been one of the major responses to the companies' return to financial equilibrium. This is a factor of resilience and efficiency. Nevertheless, the approach to risk differs according to the investment angle from the bank or the company.

Apparent Contrasts in Notions of Risk

The result is an almost asymmetrical relationship between the parties, due to the banks' informational advantage [2] vis-à-vis their customers, and in particular businesses. This gives the banks a considerable comparative advantage over third parties. This advantage has also enabled banks to create a whole architecture of risks designed to protect them against major default. Risk is part of the core system of banking organizations. Risks are divided into four categories: credit risk, market risk, strategic risk and operational risk.

Banking is therefore intimately linked to risk. These risks have been accentuated by successive financial crises, the most recent of which were the US subprime crisis in 2007 and the European debt crisis in 2011. As a result, they have become virtuous in this respect, building a risk premium into their activities for all transactions with their customers. In doing so, they follow the guidelines set by the various Basel committees (I, II, III).

We can thus illustrate the architecture of banking risks as follows [3]:

BANKING RISK ARCHITECTURE

Credit and counterparty risks	Market risks	Strategic risks	Operational risks →	Operational risks (Risk of non-compliance)
Credit risk	Interest rate risk	Risk of decisions	Risk of internal fraud	Risk of non-compliance with banking activity
Counterparty risk	Risk if change	Objective risks	External fraud risk	Ethical risks
Settlement risk	Liquidity risk		Risk of failure	Risks of professional failure
			Legal risk	
			IT risk	
			Security risk	
			Risk of damage to tangible assets	
			Risk of commercial failure	

With such an architecture, banks have a comparative advantage in the area of risk, too, although they are not completely immune to it. Beyond the asymmetry of information, this preferential advantage also stems from their positioning, the heterogeneity of their customer base, their power and the nature of their business itself. The result is a "dual approach" in the banks' strategy towards their partners, particularly companies and, more specifically, small and medium-sized enterprises, which do not have the same advantages as large corporations.

The asymmetry of information through risk is expressed in the banking sector by the fact that they have a mass of external and internal sector data, on activities, profitability levels, customer outstandings, banking behavior patterns by customer and by categorization, financial flows and a whole range of specific information on the managers themselves. In this way, they are able to adapt their risk management to these data and to the policy they intend to pursue.

Nevertheless, the outbreak of the health crisis, since January 2019, marked by Covid19, followed by the geo-political crisis in Eastern Europe (war in Ukraine), has once again highlighted these asymmetrical inequalities. Although they were the first to be affected, the banks were forced to strengthen their approach to risk as a result of these two exceptional events. These events mark a new break in the approach to risk between stakeholders, and in particular an increase in companies' dependence on the financial sector.

Companies are now isolated, with little or no information on their competitors, their sectoral risks, or even the bank's approach and policy. As a result, it has to constantly adapt and invent a model of resilience in order to pursue its development. The singularity of this case is that there is no global approach to resilience, either by business sector or by size. Each company therefore has its own resilience model. The crucial issue is to devise and implement an adaptive resilience model for all.

During the health crisis, companies resorted massively to borrowing. By analyzing the correlations between cash flow, debt and investment according to this equation:

$$\rho_{xy} = \frac{Cov(x,y)}{\sigma_x * \sigma_y}$$

The correlation is evaluated at 0.97 between deposits and investments, and at -0.86 between long-term investments and liquid investments. Only healthy cash balances are disconnected. This illustrates the positive impact of SGLs, which have had a positive multiplier effect on corporate cash flow. However, this effect should have had a positive influence on supply, which was not always the case. Other variables impacted on the resilience models that companies were entitled to develop: supply difficulties, price hikes, resulting in a deterioration in the business climate indicator over the period to end 2020.

The crucial issue, therefore, is to create and develop one's own model of resilience to cope with risks.

FOUNDATIONS, THEORETICAL PRINCIPLES AND INDICATORS FOR MEASURING RESILIENCE

Resilience, a polysemous concept, originated in physics, then spread to all possible fields: social sciences, psychology, medicine, economics, ecology, aeronautics...

The term resilience comes from the Latin word Resilio, meaning to bounce back. So it's neither an overused concept, nor a shorthand for resignation. In physics, the term resilience refers to "the ability of an object to return to its initial state after a continuous shock or pressure". In psychology, resilience is "the ability of an individual to build and live satisfactorily despite traumatic circumstances". In ecology, it refers to "the capacity of an ecosystem, a biotope or a group of individuals (population or species) to recover after an external disturbance (fire, storm, clearing, etc.). In IT, it's "the ability of a system to continue operating, even in the event of a breakdown".

Resilience is then referred to on the basis of both stable and unstable equilibrium. When a dynamic system is in place, it is designed on the basis of a stable equilibrium, but after being disturbed, it becomes unstable and will take time to regain a new equilibrium. The role of resilience is, on the one hand, to determine the time required for reconstruction and, on the other, its ability to return to a new equilibrium that is more stable than the previous one. From this point of view, resilience is a dynamic and constantly evolving state of order.

It therefore has a dual dimension: intertemporal and proportionate. And this is what we need to bear in mind when building an operational resilience model for businesses.

The Benefits of Resilience: Debt Management and Adaptability

From an economic standpoint, resilience in the sense of balance is seen as both reactive and proactive. Reactive to adapt to change, proactive to anticipate the supply and demand issues of tomorrow's world. For macroeconomics, this means linking robustness, i.e. the solidity of public policies, with the capacity of the economy to return to equilibrium and regain its previous level. The indicator here is GDP (Gross Domestic Product). For example, during the subprime crisis (2007-2011), the aim of governments was to do everything possible to fight against a systemic crisis that could have led to a complete breakdown in global economic activity.

From a legal point of view, resilience takes effect through the use of regulatory tools made available to business leaders by the legislator. These include, in particular, the Business Safeguard Act.

Although there is no organized theoretical system on resilience, there are nevertheless determining factors that revolve around three key ideas: the diversity of systems, the principle of self-organization and the question of learning. Firstly, the more an entity is confronted with shocks, the more it accentuates its organization with diverse procedures, and the better it will be able to cope with them. Take the case of the banking sector, which has developed a virtuous system of resilience by setting up an organization and procedures to manage its multiple risks (counterparty, market, operational, etc.). Secondly, the question of self-organization is crucial to resilience. All entities confronted with shocks must find ways of bouncing back, but the contribution of "help" proves to be salutary. In the case of natural disasters, some countries are better self-organized than others. The West Indies, for example, have to cope with the risk of hurricanes every year. However, not all the islands along the Caribbean coast have the same level of self-organization. Take the case of seismic risks: Japan, for example, is a shining example compared to other countries that have not integrated this risk culture. Thirdly and finally, the issue of learning, which is inseparable from the first two. The more an organization trains itself to cope with shocks, the better prepared it is to withstand the after-effects. The recent health crisis illustrates this point. South-East Asia has so far been more resilient, by constantly adapting health measures, while Europe has been focused on its ability to resist, rather than its acquiescence to health resilience. This has sometimes led to equally contradictory decisions, notably on the question of wearing masks, and social distancing, which has varied from one day to the next. The impact on the macro and particularly the micro economic level is significant, as it affects the life and organization of the country's businesses themselves.

And therein lies the challenge: what model of resilience to build between health crisis and continued economic activity? Although health is of prime importance, how can we place it at the heart of our concerns without neglecting the economic aspects that sustain organizations, and especially businesses? For example, the foodservice sector has often been sacrificed as a result of the health pandemic.

This problem is also linked to the difficulty of theorizing, measuring and rationalizing resilience to make it operational.

Several other disciplines have sought to measure resilience. We won't list them all here, but having admitted above that resilience has an intertemporal dimension, we will posit that resilience is the capacity and time required for an organization, economy or system to return to a point of equilibrium after having suffered a shock. In economics and management specifically, resilience measures the probable or certain loss of an organization, resulting in the interruption of its activity or entity after a major shock. In short, it's the ability of the strong to bounce back from a shock, but also the courage of the weak to resist and adapt to a new equilibrium, even if it's an alternative one.

How do these theoretical principles apply in practice? How is operational resilience expressed in the airline sector, for example, and more concretely and broadly in the case of very small businesses in Guadeloupe when faced with crises and banking constraints? These are exploratory questions that we feel are relevant to our analysis.

Elasticity and Cost of Risk: Between Failure and Resilience

More generally speaking, resilience is the link between nature and society, between shocks and reconstruction, and is therefore closely identified with risk management, and particularly with the cost of risk.

Let's also take the case of the airline industry, which is highly regulated and particularly closely monitored. Resilience factors are highly developed here, as they are an inherent part of the activity itself. For each agent involved, it's a question of learning technical and non-technical skills, and continuing to increase their knowledge of aggravated risk. In fact, three scenarios are involved:

1) Loss of situational awareness,
2) A sudden change in a planned event,
3) An absolute unexpected event caused by endogenous or exogenous factors.

A resilience model is developed for each of these situations.

In the first situation, the aim is to identify the severity and nature of the disruptive event, in order to deal with it using procedures, manuals and knowledge.

In the second situation, it's a matter of demonstrating operational resilience, by preparing for all scenarios envisaged, but whose timing is uncertain.

In the third situation, resilience stems from an unforeseen and unimagined situation that could arise, an "absolute unforeseen event" that the crew will have to deal with.

In air transport, therefore, we have to take account of this dual aspect: on the one hand, the intertemporal dimension of events, and on the other, the proportionality of events and their frequency. As a result, the more flight crews are trained to be resilient, the more resilience factors are correctly identified, around the notion of CRM: Capabilities, Resilience, Mobility. This notion is linked to the triptych: confidence, competence and anticipation. The resilience model in the airline industry is a fundamental concept in that, on the one hand, staff are trained to deal with emergencies on an ongoing basis, always anticipating them, and on the other, they are encouraged to prepare themselves on a daily basis by increasing their knowledge, with an almost perfect mastery of the relevant rules and procedures.

Other work on the impact of natural disasters in Southeast Asia has led to the development of a VESR (Vulnerability, Exposure, Sensibility, Resilience) model by the Pacific Disaster Center. Resilience is measured in terms of economic production, food availability, water quality, educational attainment, human development index, percentage of social expenditure, number of hospital beds per thousand people. There is therefore a link between the vulnerability of a system or organization and its resilience. The more vulnerable a system is, the more it needs to develop a resilience model to defend and develop itself.

In the case of very small businesses in Guadeloupe, let's use elasticity to measure the cost of risk. It is calculated by comparing the rate of change of one variable with another, i.e.:

$$\frac{\partial y}{\partial x}$$

TABLE 3
ELASTICITY OF THE NUMBER OF BUSINESS FAILURES IN COMPARISON WITH FINANCIAL AID IN TIMES OF CRISIS IN GUADELOUPE.[1]

Years	Corporate insolvencies	Safe cash outstandings	DE and EST elasticity
2016	3398	502,46	
2017	3792	628,77	0,461250241
2018	4201	650,52	3,118081987
2019	3345	711,33	-2,179750234
2020	2199	1624,89	-0,266761128
2021	2084	2075,58	-0,188546578

If we assume that the 1% increase in safe loans outstanding leads to a 0.26% reduction in the number of business failures in 2020 and 0.18% in 2021. We can deduce from this that, during this health crisis, aid has really supported organizations, and that the cost of idiosyncratic risk in terms of solvency is relatively low. Could this low cost be explained by companies' degree of resilience?

Resilience can be boiled down to two words: capacity and time. Capacity to cope with random events, and the time needed to return to a new equilibrium following the shock. This is clear from the number of company write-offs recorded during the health crisis (108 in 2019 vs. 95 in 2020). All things being equal, resilience is a necessity for companies in Guadeloupe, as in all other societies, to improve their resistance to possible economic disruption, through diversification of activities and many other strategies. Indeed, if they are vulnerable, they have a greater interest in developing their resilience models.

In short, government agencies and banks helped companies in the French overseas departments and mainland France to regain a degree of financial equilibrium. Companies were finally able to resort to investment, leading to a resumption of their activities, and all this at relatively low risk. The first upturn was seen in 2019, with investments worth €1,869.67 million, followed by a second in 2020, with investments worth €2,190.27 million at a more sustained pace, and a final one in 2021, which marks the same trend.

Nevertheless, the effectiveness of such exceptional aid remains very low, since the latter is about producing maximum results with minimum effort. In this case, companies have made substantial efforts (loan applications) which have only enabled them to keep their business levels stable, without necessarily exceeding or reaching the usual level, especially for SMEs and VSEs, in a context where demand itself has slowed sharply (changes in consumer habits). The business climate was also affected by this shock, as confidence among economic players declined.

Dynamics and Trends in the State of Resilience

In light of the above, we can say that the repetition of crises has led to new approaches and thinking on the fragile state of economic systems and, in particular, of companies faced with these perpetual shocks. This has involved redefining the paradigm of economic and financial crises and their effects, both conceptually, by broadening the field of thought, and operationally, by developing new methods of intervention.

In addition to internal risk factors specific to companies, external factors (environmental, climatic, health-related) have become as much a problem as situations of fragility and conflict. Companies are therefore faced with these new hazards, which have now become permanent, and need to be taken into account in their growth models. The question of strategic choices and adaptability policies specific to each company has become a fundamental notion to ensure its survival and thus reduce its vulnerability: reduction of inter-state tensions, integration of a dynamic of interactions. Awareness of the risks facing a company is becoming a major factor in ensuring good governance. Thus, the implementation of survival plans, preventive alerts and vulnerability management have become the hallmarks of a resilient investment standard, a capacity to absorb shocks and bounce back for each organizational entity.

It's a new dynamic that enables a new equilibrium to be found, just like the phenomena observed between biological ecosystems. Indeed, the more a company builds up its operational resilience model, the greater its chances of survival, since in the long term, the links with the complexity of interactions facilitate new, stable and sustainable situations. It follows that the dynamic capacity for resilience is twofold. First, an active resilience dynamic, then a passive resilience dynamic. On the one hand, (active) resilience enables us to better anticipate and manage situations that were originally totally degraded and risky, and turn them into positive survival events for the company, by putting in place "favorable routines" for prevention. On the other hand, the (passive) dynamics of the operational resilience system incorporate "post-crisis learning", facilitating greater adaptability in the face of the risks and failures with which the company is confronted to ensure its survival: relations with its financial, institutional and supplier partners. This dual dynamic of internal system resilience enables the company to adapt its choices, its resources, its relationships with partners and its strategy on a recurring basis to cope with shocks, and thus ensure the maintenance of its activities.

Characteristics of Supply and Demand Under the Impulse of Resilience

Better anticipation for better prevention, successive crises have placed resilience at the heart of supply and demand issues.

Indeed, our societies are driven by the search for a balance between the price of supply and the adjustment of demand, or vice versa. Supply, which is the quantity of goods or services offered by a seller at a given price, must meet buyer demand at a given price. The confrontation between the two determines the law of the market and its equilibrium, whether or not the State intervenes.

Nevertheless, it is often observed that the market is in a state of permanent disequilibrium, as the laws of competition and the pre-eminence of duopolies or even monopolies do not allow for the adjustment of a theoretical equilibrium in the "Walrasian" sense of mathematics.

Recent work in transaction cost theory and non-rationality theory has sought not only to explain these imbalances, but also to correct them. These attractive concepts have succeeded, but only partially.

The rise of resilience theory also has the strong ambition of being a credible alternative to the phenomena of disequilibrium and market imbalance in supply and demand.

The principle of resilience therefore builds on existing cases, because not only are they pre-eminent, but they dominate market situations more often than not. Cases such as: Giffen's goods, concerning basic necessities; Veblen's effects, concerning the luxury goods market; more generally, speculation, which favors deflation or inflation; Akerlof's substitution effect; the ratchet effect, contingency factors such as crises, the environment and health crises are all phenomena that skew the law of market equilibrium, demonstrating that resilience offers a new, more credible alternative for solving these numerous problems.

In this way, the focus on business continuity even in crisis situations, and the anticipation of such situations by anti-crisis cells, are aimed at defining resilience models on a theoretical level, and action plans for managing and applying the resilience model on an operational level. These new resilience models are all the more important as the nature of crises has changed profoundly since the 80s and 90s, becoming more frequent and more violent. The idea is to enable organizations to increase their acuity and capacity to withstand successive and numerous shocks. Anticipation thus becomes upstream and resilience downstream as an application model, with one intertwined with the other.

THE OPERATIONAL RESILIENCE OF GUADELOUPE'S BUSINESSES

The survey carried out by QualiStat in conjunction with the Guadeloupe Consular Chamber in April 2021 shows the effects of the health crisis on companies and their degree of operational resilience. Beyond the profusion of figures revealed by statistics, a symbol of Cartesian rationality, it is relevant to draw lessons specific to the reality that can emerge from resilience itself. This shows that, in a small area such as Guadeloupe, dominated by an economic fabric of small businesses, the first

"Toxic-handler" (catalysts of suffering in crises) are the business leaders themselves. In short, they carry within them the three attributes identified by G. TENEAU: they are bearers of confidence (in the sense of expertise and courage), bearers of suffering (managing emotions) and bearers of compassion (representing an ideal model of hope and resistance).

The Dual Dimension of Resilience:

The first phenomenon is the perception of resilience. This can be positive or negative. This period of turbulence forces the individual, the company director, to make two possible choices: retreat, or the capacity for resilience that enables him or her to confront opportunities and bounce back. This is the voice of resilience, the "psychological contract" based on "emotion-thinking".

On the one hand, the positive perception of resilience has five basic principles.

The first is trust, with 48% of business owners still hopeful about the future (the same applies to employees). Although this result may seem low, it has improved since the previous survey, when only 21% remained confident. So resilience, which is a vector of rebound, shows its fundamental aspect first and foremost. Worries about the future have receded, as managers have become fully aware of the power of the word resilience. But at the start of the pandemic, 72% of those surveyed were pessimistic about sales levels, and 23% feared bankruptcy. More specifically, confidence fell to 8% in industry, 25% in services, 29% in construction and 50% in trade.

Le second principe de base est celui de l'adaptabilité. En effet, près de 59% des chefs d'entreprises ont estimés être en mesure de s'adapter face à un durcissement des contraintes sanitaires. Ceci confirme la question de la confiance et de la résilience face à une crise et singulièrement celle de la covid19.

The third principle: the doctrine of resilience, "the art of bouncing back", moving from the phase of deconstruction to the phase of reconstruction. This is the CRC model: Crisis - Resilience - Change. The health crisis was unexpected, then violent. Many business leaders lost their bearings before taking action to resist. These actions enabled them to develop new strategies, adapt to the situation and create a new organizational model - the resilience of change.

Firstly, by maintaining business activity. In fact, 85% of business owners have maintained their company's activity.

These activities have been maintained thanks not only to government measures, but also to the use of digital tools (72% users) and the introduction of telecommuting (60%), all of which have brought about a real transformation in the company. In fact, 59% of business leaders feel that they are maintaining this form of working after the restrictive measures.

- *A positive response to government measures and the use of digital tools.* ***Figure 2*** *:*
- *Positive government measures: short-time working, SGLs, tax and social reports, solidarity fund, bank credit mediation.*

The fourth principle: the external factor of removing constraints and compelling reasons. Over 72% of business leaders disapproved of the compelling reasons for commuting, which are synonymous with a drop in activity and the breakdown of economic ties. Nevertheless, they have adapted to this new economic life.

Finally, the fifth principle: the geographical space of each economic area and the issue of company size. More than 61% of business leaders feel they have adapted to the size of their company.

On the other hand, the perception of resilience can also be negative. This is an expression of a loss of trust in the future and in upcoming deadlines. This fear stems from several factors: cash flow difficulties (39%), difficulties in meeting tax and social security deadlines (33%), and insufficient equity capital (26%).

These fears are expressed in terms of the company's economic and financial fundamentals: cash flow, tax and social security deadlines, equity levels, and difficulties in repaying PGEs. These fears were illustrated by significant sales declines in each sector, with an average drop of -13.1%, the most significant of which was the -49.5% drop in the tourism sector.

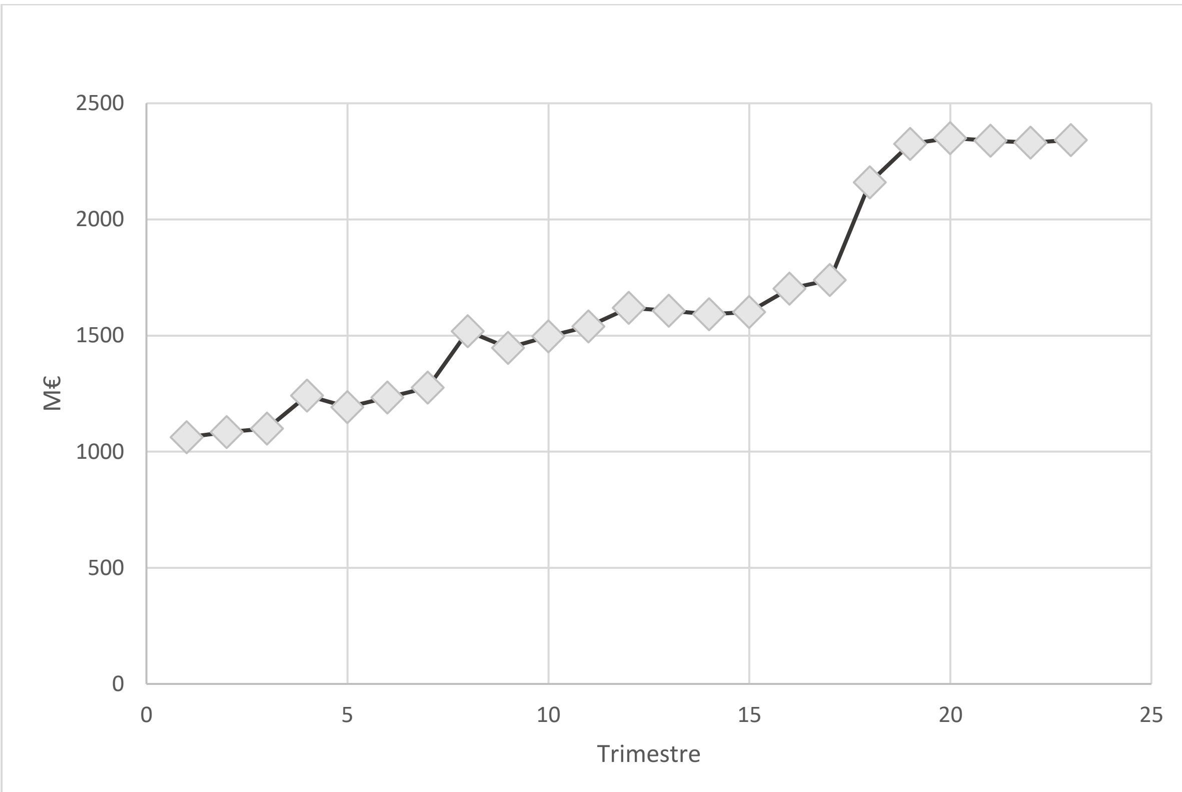
The contrast is such that the sector most affected by the health crisis, tourism, was not the one to make the most use of financial aid (only 10.95%). On the contrary, it was the motor vehicle trade and repair sector that was particularly proactive (26.78%). Distribution of SGLs per sector of activity on January 1, 2021 in Guadeloupe Companies in the motor vehicle sector were the most virtuous and consequently the most financially resilient, followed by those in the tourism sector. To a lesser extent, companies in the commercial goods and services sector have shown resilience in terms of short-time working (65%) and deferral of tax and social security payments (37%). This was also the case in the Grand-Est region (Auvergne-Rhône-Alpes) and in the French overseas departments.

In short, almost 90% of companies that took advantage of the SGLs were able to maintain their activities, although some went bankrupt in spite of the scheme. There are many reasons for this: they were poorly structured at the start, were already in difficulty, and the upturn in business failed to materialize (lack of a convincing market), particularly in the building and civil engineering sector.

Leveraging Debt

With the financial measures put in place, some companies have demonstrated ingenuity, resilience and, for some of them, over-resilience. Ingenuity is expressed in creativity in the face of restrictive measures. Resilience was expressed in adaptability and resistance, maintaining their business models. Over-resilience by using debt (SGLs) as leverage. Companies have seen their cash flow grow over the period 2016-2021, as illustrated in the following graph:

FIGURE 6
BANK SAVINGS OF GUADELOUPE COMPANIES (2016 -2021)



The average quarterly growth rate was 3.49%. In addition, the positive coefficient of asymmetry is 0.51916504, reflecting the cautious attitude of business leaders. This is a cautious behavior and financial resilience by building up precautionary savings. The choice of debt repayment by amortization reduces counterparty risk, creates a mechanical leverage effect thanks to the overabundance of their cash balances, and increases company life expectancy.

Nevertheless, the standard deviation shows disparities by economic sector. Beneficial effects for the motor trade, capital goods and agri-food. On the other hand, other sectors, such as catering, personal services, accommodation and construction, are more adversely affected.

Digital Resilience and Its Limits

Digital tools have made a fundamental mark on the way companies pursue their activities, and have established themselves as an alternative response to a new, resilient and virtuous economic model. In fact, social networks have gone beyond their primary role as actors in social life to become vectors and relays of economic links between companies and their customers: 68% for information, 58% for visibility and 23% for sales. They even offer the advantage of cutting out intermediaries, enabling a direct relationship and improving the fluidity of exchanges, with 7% of direct marketing users.

They have also been used as an internal support for virtual platform meetings, with almost 51% of companies surveyed having used this mode of virtual internal communication.

Nevertheless, against this backdrop of crisis and risk, responses on the future remain highly contrasted. In fact, only a third of business managers surveyed said they were inclined towards development projects (34%), even less so for innovation projects (29%) and investment (26%), and only 18% of business managers surveyed were concerned about the workforce and its evolution. These contrasting results reflect a certain "wait-and-see" attitude on the part of business leaders in the face of changing constraints and risks.

The Mathematical Approach to Resilience and the Notion of Equity

From a mathematical standpoint, resilience can be defined in three stages: definition of the set of elements that make it up and their properties, identification of a value function linked to cost, and existing and future disturbance parameters.

First of all, we need to consider the stability of the elements that make up resilience over time [T]. If these elements are stable, then it is possible to determine a regulation law. Otherwise, a multiplicity of non-stable elements would be formed. In the case studied, the question of resilience arose as a factor in coping with the health crisis and related constraints. Stakeholders' objectives remained stable, although their views and behavior evolved over time.

Secondly, the question of value and its maintenance in relation to cost is decisive. The evolution over time of the company's value is crucial. However, since the health crisis, we have witnessed the creation of a great deal of new value, offsetting the destruction of value and the destruction of businesses. The rate of company closures has been almost mathematically offset by a dynamic rate of openings. Intrinsically, the companies themselves have shown great ingenuity in reinventing themselves, as indicated above (cf. Qualistat survey). Finally, the parameters of disruption are measured by the ability of the entrepreneur and his organization to move from state "x" to state "y". This stage includes organizational changes, the use of new tools, as well as the company's ability to seize all opportunities, particularly institutional ones, to face up to the crisis by using the measures in place (aid, SGL, continuity plan, support plan). In the cases studied, the majority of companies were able to put these measures to good use. In fact, regardless of the tests used (Least Squares-Student-Fischer), there is a regression between healthy cash flow and healthy investment outstandings. Let's take the example of the Fischer test method. The degree of freedom is such that:

$$(num/denom) = [(2-1)/(23-2)] = 1/21$$

The result is, F = 4,35$table$

For the model to be valid, it is necessary that: F$table$| < |F$calcul$é|

We have thus:

F = 82,04 soit F > 4,35 $calcul$é

We can conclude that cash flows are partly the cause of investment flows. The regression model between healthy cash outstandings and healthy investment outstandings shows a high correlation of validity.

As a result, not all financial packages have had the same effect. From the start, companies had two choices: repay the debt in a single lump sum, or spread the repayment over a period of 5 to 6 years. Nevertheless, 5% to 6% of the companies that benefited from this aid were unable to repay the debt. To some extent, this was seen as a stranglehold for companies that had already experienced post-covid19 difficulties. This accentuated the risk of bankruptcy for the least resilient organizations, for a measure that was intended to revive them. As a result, the notion of equity in "emergency measures" was called into question, and even became a source of injustice. Moreover, during this period, according to the Qualistat survey, 47% of company directors declared themselves to be in a worrying situation, compared with 52% in a healthy one, i.e. almost one company director in two was worried.

The advent of the crisis in Ukraine aggravated the structure of companies less prepared for these exogenous shocks, and contributed to a whole series of deteriorating indicators: rising prices, inflation, monetary contraction, rising long-term interest rates, and drastic changes in consumer behavior.

In short, efficiency has been respected, as in most cases its provisions have led to a revival in the performance and dynamism of the most resilient companies, as is the case for the motor trade, capital goods, consumer goods, the agri-food industry and, to a lesser extent, accommodation.

Efficiency is perfectible for organizations that have demonstrated “risk-averse” behavior, given that they have shown prudent security with their debt management, used more as leverage.

Fairness is relative, as the measures were beneficial for some sectors and less so for others. Hence the relative fairness for the least resilient organizations, operating in sectors less prepared for exogenous shocks and unable to manage additional debt with a massive monetary influx leading to an acceleration of inflationary zones, thereby weakening purchasing power.

CONCLUSION

This article examines corporate resilience factors and the relevance of the financial mechanisms put in place to deal with the health crisis that will occur between 2020 and 2021, on a global scale. These resilience factors have been approached as a whole from a general point of view, and the specific case of Guadeloupe companies has been examined from a statistical perspective. Once the concept of resilience, defined as resistance to shocks, had been established, the key questions were, firstly, how companies were able to cope with the crisis. Secondly, whether the financial measures implemented mainly by banks proved effective, efficient and fair. And thirdly, how banks deployed themselves, despite being subject to stringent regulatory standards for risk management.

In the first place, resilience is a powerful lever, in the event of a crisis, that enables the business leader to define a new organizational strategy to bounce back, to create new added value to maintain and innovate. In short, to increase the resilience capital of each company player. Using a tripartite approach, we began by taking stock of banking risks and the way in which the banking sector deals with its own risks and the repercussions for companies.

Secondly, the need for companies to remain resilient in order to remain competitive and sustainable. Resilience appeared to us as a necessity imposed on every company, a model to be integrated in order to face all eventualities. One example is the airline industry, which has intrinsically developed a concept of resilience specific to its activity and adaptable to each airline. Resilience is not a choice, but a necessity, an inescapable organizational pattern to be integrated.

Thirdly, we drew on a representative statistical study of a significant sample of over three hundred companies surveyed who were confronted with the constraints of the health crisis following Covid19 and the associated risks. The aim was to measure their degrees of resistance, and to analyze and identify the different models of resilience implemented through the financial mechanisms available to them. This third approach brought out the full complexity of resilience, representing a dual dimension as indicated above: intertemporal and proportionate. Indeed, the results of this study demonstrate that resilience, perceived as an alternative response to constraints and risks in the context of a health crisis, represents a mode of economic development that is adaptive to the context and issues at stake. Resilience patterns are therefore adaptive, evolving and specific to each sector, or even each company. So there is no single resilience or rationality of resilience, but rather plural resiliencies, plural rationalities according to sector and organization. So we move from organizational resilience to operational resilience. In other words, it’s the best capacity and faculty for anticipating and adapting to shocks, implementing alternative solutions and new organizational schemes to enable re-invention and the appropriation of a new development culture profitable to the organization. This is about a return to grace, a new form of corporate management less focused on performance and lack of ethics, and more on lower debt, a prudent dividend policy, and management geared towards benevolence, understanding of others and indulgence of employees and customers. A real paradigm shift. In short, if we are to draw up a benefit/risk table, the question of resilience (in the sense of training) is a powerful response to this matrix. This is the cardinal point: combining performance and resilience, and knowing how to make them compatible!

ACKNOWLEDGEMENT

Translated & edited by American Publishing Services (https://americanpublishingservices.com/).

ENDNOTE

1. The data collected for the "business write-off" variable comes from the CCI Guadeloupe platform, and the "business failures" data from INSEE.

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