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Non-Incomes Risk Mitigation Mechanisms for Cultural Heritage: Role of Insurances Facing Covid-19 in the Italian Context

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***Abstract* – The economic cultural heritages are exposed to several natural and nowadays biological hazards, which, in addition to causing potential structural damage, can lead to severe loss deriving from financial non-incomes. The paper aims to highlight the role of insurance in mitigating financial damages and losses, specifically explaining the key role of insurance in mitigating biological hazards like Covid-19. The paper is part of broader research by the authors and uses the assumptions and results already obtained previously in the context of the case study relating to the asset of *Villa Adriana* and *Villa D'Este*.**

***Keywords* – Biological and natural hazards; Covid-19; cultural heritages; risk mitigation; risk and resilience; insurance**

Nomenclature		
AIP	Approved Insurance Provider	–
AGR	Adjusted Gross Revenue	–
CPD	Department of Civil Protection	–
NFIP	National Flood Insurance Programme	–

1. INTRODUCTION

1.1. Background

The rise in the number and economic consequences of hazards triggered by natural disasters creates momentum for developing insurance tools schemes as a risk financing and management instrument. For many years, insurance mechanisms against natural hazards have been one of the most crucial matters of discussion at the European level. In 2013, the European Commission drafted a Green Paper entirely dedicated to 'Insurance against Natural and Anthropogenic Disasters'. Moreover, in the focal Paris Agreement of COP 21 of December 2015 [1] this relevant topic was a key aspect to enable cooperation within different disciplines, and improve understanding, and support in several fields, such as, among others, risk insurance.

In many countries around the world, including Italy, interest in a natural hazard insurance system [2] emerges from the search to find an efficient tool for compensating those insured who suffer losses, assessing the financial risk of uncertain losses, and ensuring faster and

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better rebuilding repair timeframe. In Italy, natural hazards, such as earthquakes, floods, and landslides, are responsible for annual losses equal to 0.2 % of the national gross domestic product. This issue is particularly significant due to the insurance market's problematic aspects, inherent limits, and disaster insurance's low penetration rate [3].

The current situation of the insurance market, in particular the Italian one against biological and natural disasters, sees a general context in which the assets of individuals are not almost entirely insured against the risks of disasters. Indeed, only a limited part of public entities and small-medium sized companies are insured with specific policies to cover earthquakes and floods. On the other hand, there has been a slight growth trend of medium-large companies in the last decade, which have deemed it appropriately and coherently to take advantage of specific insurance policies over the years. According to Porrini, the cause of the lack of penetration of insurance policies in the context of individuals has to be found in the so-called disaster syndrome – stunned, shocked state common in the impact phase of disasters – due to the distortions on the demand side and insufficient supply of coping disaster resources [2].

According to the study of Croce [4], the year 2020 was the first of the Covid-19 Pandemic era that profoundly marked the life of the entire world population, as the current pandemic is one of the systemic challenges that are likely to intensify in the coming years. The reason lies in the policies and economies oriented by the capitalist mechanisms triggering a more critical effect as environmental and human decline. To cope with this scenario, it is necessary to radically rethink our lifestyles and organizational forms towards a structural change towards environmental sustainability that affects everyone and requires everyone's commitment.

The health emergency caused by COVID-19 immediately reverberated its effects also on cultural heritage [5]. As of February 24, 2020, the Italian Ministry of Culture (MIBACT) had suspended free admission to museums and places of culture from Sunday 1 March 2020. A decision preceded a few days before by the closure of museums, cinemas and theatres in the areas most affected by the pandemic, which was followed, in the days immediately following, by the suspension throughout the national territory of the public opening services of institutions and places of culture [5]. In the following months, from May 2020, the opening service to the public of museums and other cultural institutes and places was allowed, under certain conditions, and, from June 2020, the holding of shows open to the public in theatrical halls, halls concert halls, cinemas and other spaces. Indeed, from 6 November 2020, the exhibitions and public opening services of museums and other cultural institutes and places have been suspended again [6].

Natural hazards, particularly those enabled by climate change, have been causing increasing numbers of catastrophic events, leading to a higher probability of damage to cultural heritage.

According to a recent report published by the Italian Association of Insurance Companies (ANIA) in 2017, ‘the catastrophic events of August 2016 in the Centre of Italy have highlighted, once again, how vulnerable the Italian territory is and to what extent the historical buildings in Italy are incapable of withstanding earthquakes, even ones that are not particularly severe. Based on the estimates of the Department of Civil Protection, the earthquakes of the summer 2016 caused damage for over € 23.5 billion, of which € 12.9 billion for damages to private dwellings (the estimate includes direct damage, both public and private – namely the destruction of buildings, infrastructure, crops and damage to businesses and enterprises, cultural heritage, power networks, gas and water distribution systems – and eligible costs, borne by the state in response to the emergency’ [7].

Disaster prevention is essential to save cultural heritage. Management and investigations after a disaster are also very important to define the extent of damage to movable and immovable cultural heritage [8].

Within this context, the Italian experience with the Department of Civil Protection (CPD) and the Ministry of Civil Protection considered it seems appropriate also for the European context. In fact, setting up a special Committee that has recently disseminated, released, and published behavioural models compiled by specially trained teams after an earthquake seems a consistent approach. These models allow a description of the damage, calculate the vulnerability indexes and calculate the cost of the intervention [9].

Several European countries have implemented and developed important web systems of information and advice for emergencies [10] related to natural disasters, in particular floods. But, unfortunately, they usually do not contain specific information and instructions on the conservation and protection of cultural heritage.

Preventive measures, in the general context of hazards, regardless of their nature, are typically sorted into two categories: structural and non-structural. Structural measures are challenging to materialize in the case of cultural heritage protection because they are mostly visible, disturbing, and often not cost-effective [11]. This subject would require further research and comparison to best practice non-structural measures. As far as structural measures are concerned, the application of standards to protect cultural heritage from natural hazards leads to the problem that historic monuments' originality, authenticity, aesthetic qualities, and values should not be compromised. However, only one European Standard is in practice available for effective protection of cultural heritage against earthquakes [12].

In the light of the case study presented *infra*, it appears extremely relevant to verify the legal and operational conditions in the Italian regulatory framework. In the context of Italian legislative prescriptions, a Seismic Code (EuroCode-8) was published in March 2003 [13], containing standards for buildings (minor historical architectures). The Ministry of Cultural Heritage has extracted and outlined the guidelines for cultural heritages from this standard. Recent experience with catastrophic damage, linked to real opportunities to adapt the architectural heritage to reduce such damage, indicated that some changes to the relevant standards could be adapted and implemented.

Insurance companies have a triple role as risk managers (physical risk management), insurers (financial risk management) and investors (investment management). They may be linked to sensitive clients and investees through their insurance, reinsurance and investment activities [3].

Insurance transactions related to sensitive customers expose insurance companies to several risks. In particular, in underwriting, these risks apply and are evident to many sectors of the non-life insurance business, particularly in the industrial and commercial insurance business [2].

European countries have decided to assess various approaches to insuring cultural heritages against natural disasters. In particular, flood insurance is not popular in the European context, and in some countries, it is not possible at all to insure property positioned in an area of potential floods and inundations, such in the Czech Republic. A specific study of flood insurance assessments in the European Union and a comparison with the US NFIP (National Flood Insurance Programme) defines that the American system offers several substantial benefits and has determined and decreased federal disaster assistance. Łasut assess the situation in Europe as it follows: '*France has a functional system of insurance protection against natural disasters* [...] *In Germany, three classes of flood zones are declared, which correspond to the risk of flood occurrence, and insurance premiums depend on the location of the property in the zones. As in the USA, there are some conditions that a property owner has to fulfil before the insurance can proceed. This situation means that the state and local governments are the main providers of flood reparations in major catastrophes. In Britain, insurance policy changed in 2002 and flood insurance is becoming harder to obtain as*

agreements on providing household flood insurance at reasonable cost expire.' [14]. Nevertheless, the insurance companies, among the European area, are increasing their involvement in advisory tools, namely in relation to floods.

Otherwise, the American National Flood Insurance Program (US NFIP) was conceived and designed as an alternative to disaster relief, and distributes the responsibility and social and economic burden for floodplain management to each government level and the private sector, setting a federal standard for assessing new developments in floodplains and materializing a comprehensive floodplain mapping program. The prescriptions of NFIP can be understood with the most relevant literature [15], [16] or through analytic description [17].

In a nutshell, concluding this section relating to the introduction, the authors' objectives aim at highlighting an innovative strategy of *ex ante* (prevention) and *ex post* (losses) risk mitigation for all those economic heritages which, as occurred with the SARS Cov2 pandemic, may suffer damage and losses, *latu sensu*, such as to affect their profitability.

1.2. The Definition of the (Economic) Cultural Heritage

To verify the extrinsic and intrinsic importance of cultural heritages, the criticality of a threat such as that relating to any hazard, it appears extremely decisive to assess the characteristics of an economic heritage, in the sense in which, broadly speaking, the latter has a financial connotation in the country's economic macro-system.

Like any other public asset, cultural heritages are exposed to the risk referred to in natural and biological hazards. Many authors have offered valuable disseminations on catastrophic risks from natural disasters [18] and their consequences in terms of human and economic damage from reconstruction. Recently, this interest has also turned towards the biological hazards due to the Covid-19 pandemic. However, natural hazards similar to biological hazards involve other problems, perhaps less immediately perceptible but equally serious, such as the purely financial ones from non-incomes. In recent years, attention on the mitigation of cultural heritage risk has considerably increased. More specifically, a momentum started towards a better understanding of the economic aspects that could have an essential part of municipalities' budget and thus on the municipality planning and risk management.

In fact, the so-called economy of cultural heritages, understood as managed assets, plays a key role in the public economy [19], especially in some areas of the world, such as Europe. Moreover, like a private company, economic management in cultural heritage dynamics, has made it possible to implement tourism, welfare, and heritage management [20]. Nevertheless, it seems opportune, before delineating, in the continuation of the paper, the nodal fulcrum of the text, to settle the main objective and subjective characteristics of cultural heritage with an emphasis on the economic one.

Starting from the general concept of heritage, Europe, in the past, developed a typically monumental conception of cultural heritage: it included sites and monuments on the basis of their historical and aesthetic value, a method which was gradually abandoned in favour of a more anthropological and global approach in order to safeguard not only the materiality of goods, but also the symbolic, social, cultural (and subsequently economic) values of which they are an expression [21]. Therefore, the notion of cultural heritage has considerably expanded over time and has become progressively more complex. This is no longer limited to historical monuments, but includes the urban sector, natural landscapes and any construction considered worthy of being preserved.

The renewed meaning of the notion of 'cultural heritage' has stimulated a new relationship of collaboration between scientific and humanistic disciplines. This new approach opened up the possibility of broader and deeper involvement in the vast range of potential actors of

conservation, protection, safeguarding, and enhancement of cultural heritage [22], paying particular attention to the recipients of use: the communities of citizens.

Moreover, precisely starting from the broader concept of cultural heritage, economic management is understood as the enhancement of the intrinsic and extrinsic value of tangible and intangible assets [23] from an economic/financial point of view in accordance with the 'esprit' of obtaining resources and income for self-financing and in- house livelihood of the cultural site *ex se* [24].

The enhancement of the heritage is structured in different degrees of intervention, the first of which is represented by the finding of resources: to meet the needs of the cultural heritage it is necessary, first of all, to build suitable financing systems [25] that involve not only the governing bodies, such as the proverbial lack of resources, but also the private actors (profit and non-profit) in a subsidiary perspective, of involvement and participation and taking responsibility.

1.3. The Importance of the Cultural Sector in the Italian National Macroeconomic Perspective

Leaving aside the 2020 data, affected by the Covid-19 pandemic outbreak, it is necessary to highlight the role of cultural heritage as a macroeconomic industry, with a specific emphasis on Italy. As of 2019, Italy claims for 4,908 museums, archaeological sites, monuments and eco-museums open to the public. It is a widespread and vital heritage resource throughout the whole territory. According to the detection, at least one recognized museum structure is in one out of three Italian municipalities [26]. Most are museums, galleries or collections, in addition to 327 archaeological areas, 630 monuments and 69 eco-museum structures.

The market value of the cultural heritage industry, according to the latest survey carried out by the National Institute of Statistics (hereinafter ISTAT), outlines incomes for a total of € 168 billion [27].

Taking as reference only the museum compartments, of which ISTAT has drafted a specific section, since the last annual survey, the 358 Italian state museums have produced € 27 billion, a value equal to 1.6 % of GDP, it is equivalent around to 10 % of the total museums in Italy, which has about 5 thousand archaeological sites and parks throughout the national territory. With 117 000 jobs, € 278.000.000 of revenues and 53 million visitors during the year, Italian state museums are a fundamental and strategic force for the country's growth [28].

2. THE EFFECTS OF NATURAL HAZARDS ON THE ECONOMIC AND FINANCIAL COMPONENTS OF CULTURAL HERITAGE

2.1. Financial and Economic Data on Damage from Natural Disasters

Natural disasters represent a severe threat to cultural heritage. Many heritage objects are further negatively affected and damaged by inadequate emergency interventions because urgent responses to basic and fundamental needs may bring to emergency measures and to planning and rehabilitation measures for recovery that are not sensitive to cultural heritage. According to the World Bank's Independent Evaluation Group [29], the cost of disaster damage is rising, and in the 1990s it reached US $ 652 billion, which is 15 times higher than in the 1950s. The number of events grew by 400 % between 1975 and 2005, with 2,6 billion people affected by natural disasters over the past ten years [30], [31].

As reported by the European Parliament, 'long-term climate effects and other disasters sometimes cause irreversible damage to Cultural Heritage, or completely destroy entire areas of Cultural Heritage, both movable and immovable' [32].

On one side, Italy, is extremely known for its cultural heritage, one of the most important and largest in the world (50 UNESCO World Heritage cultural sites). However, on the other side, the Italian territory is extremely exposed to natural disasters [31]. Moreover, in addition to the above data, it is worth mentioning two important hazards occurred recently that seriously affected Italian Cultural Heritage, such as '*the 1997 earthquake that destroyed the San Francis Basilica in Assisi and the 2009 earthquake that damaged the L'Aquila Cathedral. Therefore* […]*, concerning the protection of Cultural Heritage, a relevant role could be played by insurance instruments*' [33].

Within this background, a multi-hazard perspective nowadays due to the occurrence of biological hazards, like pandemic from Covid-19, created the ground for a more important role of insurance mechanisms specifically addressed to cultural heritages.

2.2. Traditional Forms of Insurance on Cultural Heritage Sites Affected by Natural Hazards

According to several authors [34], [35], insurance companies are extremely relevant according three economic points of view. The first is represented by the risk transfer, which is transferred from a risk-averse and weak counterpart individual to the risk-neutral insurer, namely the insurance company. The second is represented by risk pooling, whereby, by operating a multi-insurance in favour of several insured individuals, the inherent uncertainty of the individual instead becomes the 'certainty' for the insurance company that this risk will materialize, at least, in the premiums paid by the same insured. The last economic role play is taking the form of risk allocation by which the payment of the premium by each insured party should be directly proportional to its own level of risk.

In the light of the economic key roles of above, it seems appears pretty obvious that insurance increases general social welfare and nevertheless, convincing the holders to act preventively, as well as encourages the risk-averse individuals to enter the market, since the determination of the risk price obviously involves a general economic benefit from the precautionary expense. Consequently, risk transfer, risk pooling, and precautionary risk mitigation from the abovementioned assumptions create the substrate for the optimal economic risk management portfolio [36].

In view of the preservation and maintenance of cultural heritage, it seems appropriate to recall an important contribution according to which '*Thus, the preservation of Cultural Heritage assets must guarantee not only their capacity of lasting over time against natural decay without losing their authenticity and usability but also their capacity to withstand natural hazards and extreme events with limited and expected structural performance*' [37].

In this case, the role of insurance arises as a suitable mechanism both from an ex-ante and an ex-post point of view. First of all, it might be seen as an ex ante tool because it allows to make an in-depth analysis about vulnerability aspects and the exposure to hazard risks of the heritages, which would be necessary for the calculation of the premium. Consequently, it might be understood as an ex post tool because it covers heritages for the damages and the consequent reconstruction [38].

Insurance, so far, is an active tool for unexpected losses [39] caused by natural hazards. It might aid in well in depth understanding all the aspects of the risks connected to catastrophic events [40] and in decreasing the related immediate long-term financial losses [41].

3. METHODOLOGY

This study has been organized in the following methodological steps.

An in-depth literature analysis is performed to identify the general background and the state of the art of the insurance tools in biological and natural hazards at the Italian and international levels. In specific, this first step is addressed to identify the general framework that regulates the insurance schemes for cultural heritage within the scope of the regulatory and binding laws.

The second stage, better outlined infra, is addressed to identify the key features and critical aspects of risk mitigation of cultural heritage against biological and natural disasters with a specific focus on the Italian national point of view.

The final stage is about presenting an innovative concept for elaborating insurance tools addressed to non-incomes risk mitigation mechanisms for cultural heritage facing Covid-19.

Cultural heritages are an essential industry for countries [5]. They can be considered critical assets exposed to natural hazard potential, enabling physical damage and cash flow disruptions.

As mentioned in the introduction, the paper fits into the context of a broader scientific research [15] on the relationship between biological hazards [16] and cultural heritage. In particular, this section refers to the sum of the losses from non-incomes suffered by the cultural heritage referred to in the case study, in particular, *Villa Adriana and Villa D'Este*, during the pandemic outbreak from Covid-19.

From the forecast of losses non-incomes from ticket sales [5], it might be possible to assess a possible use of insurance coverage to deal with the risks described above, considering a flexibility component of the periodic cost according to the claims experience ongoing registered.

Consider a random variable X that describes the theoretical amount of compensation in the time unit (for example, one year), from which an insurance premium P can be calculated and for which in a traditional insurance has to be considered constant, for each period of coverage and function of the distribution of X.

As an element of the insurance coverage, in addition to the cost of restoring the damage deriving from the occurrence of accidents, the revenue from ticketing could also be considered in terms of damage of closures of the structures due to accidents that prevent the use of the same for the potential clients. The variable X is to be considered all-inclusive of all damages.

The flexible approach is based on recording the amount of the adequate compensation in the period prior to a recalculation date t, from the start of the insurance coverage, which can be fixed as time 0, i.e. the compensation for t years, $Y(0,t)$. The periodicity of recalculation must be contractually fixed every year or with a different frequency.

Let $Y(0,t)$ be the total amount compensated by the insurance and P the number of premiums paid by the insured in the same period, the flexibility consists in setting a *bonus-malus* scheme according to the different levels that the difference as described in the equation below:

$$Y(0,t) - P = D(t). \tag{1}$$

If $D(t)$ exceeds a certain threshold, i.e. more compensation than premiums paid, then the flexibility scheme could increase the premium until the next recalculation.

While in case $D(t)$ is negative, there could be a decrease in the premium until the next recalculation and/or retrocession of part of $D(t)$ to the insured, perhaps to be tied to risk mitigation works.

Precisely the possible progression of risk mitigation works, to be financed independently and/or by resorting to these possible insurance retrocessions, could gradually decrease the cost of insurance coverage, provided that the amount of the actual damage is affected in the right way (i.e. reducing) of the mitigation effect, otherwise, this flexibility scheme would return to generate positive $D(t)$ levels which would consequently increase the premium.

The systematic-quantitative approach outlined above refers to an evaluation that poses as focal and prodromal to the case study referred to in the next section.

4. A New Insurance Approach for Cultural Heritage Based on the Adjusted Gross Revenue: A Case Study

This paragraph proposes a real case study based on the methodology and calculation methods.

Cultural heritage, as highlighted above, has always been considered a static element whose value is represented by the intrinsic value of the assets that compose it and by the cost of reconstruction.

And therefore, companies have, over time, adopted traditional forms of risk mitigation and reconstruction insurance without even the diffusion that would have been desirable for such a decisive and important issue for public welfare.

In fact, the insurance coverage, ab initio, has focused on ex-post protection, i.e. on the disbursement of equal sums, theoretically to the reconstruction of damaged assets, or, more recently, attempts have been made in order to provide ex-ante protection, i.e. the possibility, through constant disbursement of the insurance premium, to allocate part of these to the construction of risk mitigation structures.

The author's idea in the possible development of a different approach underlies the idea that the economic cultural heritages, whose definition has been outlined, among others by Pagano [5] by now, can no longer be understood as any public asset, whose value is outlined by the cost of the immovable asset ex self. In fact, the cultural heritage, and *Villa Adriana and Villa D'Este* are an example of this, they must be, for the aforementioned reasons, as well as economic activities, industries, exposed not only to the risk of natural hazards, but also to the so-called business risk in the sense in which, although 'public entities' are not subject, at least in accordance with Italian law, to the rules of insolvency, they are subject to market rules and to these fluctuations in the context of cash flow. In practice, having unravelled the doubts on the systematic classification of economic cultural heritage as public industries, it seems appropriate to verify whether some form of insurance, ab initio used for other areas, could be used and useful for the purposes of heritage when incomes are affected due to hazards to losses and negative fluctuations.

Therefore, to mitigate the catastrophe risk from natural hazards regarding financial losses, the author suggests evaluating the option of adopting a particular form of insurance, widespread above all in the USA in the agricultural field, i.e. the protection deriving from the Adjusted Gross Revenue (AGR).

AGR insurance is a non-traditional insurance plan that allows the risk management of the entire company. It is a very interesting product because it could be a study model for a possible application in Italy and other European Union countries.

AGR is a policy that insures company revenues; the historical gross revenues of an agricultural company are used as a reference parameter, obtainable from the tax data (average of the last 5 years) reported by the parties.

It is an insurance product applicable to any production sector.

Although strictly related to the paper, the AGR Policy offers, among others, insurance coverage for losses of gross revenues due to natural disasters or calamities.

Using the data obtained from the paper on the calculation of Covid-19 losses for the heritage of *Villa D'Este and Villa Adriana*, proceeding to the calculation table for the elaboration of the insurance premium and respective disbursement, the following calculations are reported.

TABLE 1. RELEVANT INDICATORS (2017–2019) [5]

	2017	**2018**	**2019**
Tax charges, €	316 491.81	31 500.00	55 905.12
Charges for active workers of service, €	229 136.30	215 000.00	161 517.36
Purchase of goods of consumption and services, €	710 067.95	801 500.00	1 209 335.69
Recovery, restoration, adjustment and maintenance of the immaterial assets (software/hardware) and material movable and immovable assets, Purchase of goods of consumption and services, €	1 237 997.60	975 000.00	1 343 449.73
Ministerial and state grants: concession assets, €	200 000.00	400 000.00	199 744.81
Ticket sales, €	3 350 822.12	4 000 000.00	4 869 535.94

Eligible Revenues (2017): (€)

$$3\,350\,822.12 + 1\,237\,997.60 - 710\,067.95 - 229\,136.30 - 316\,491.81 = 3\,333\,123.60$$

The eligible income for 2017 was therefore equal to € 3 333 123.66.

Once the eligible income has been calculated for each year, the adjusted gross revenue by means of increases or decreases is calculated:

TABLE 2. CALCULATION OF AGR

Year	**Eligible Incomes, €**	**Increase/Decrease, %**
2017	3 333 123.66	
2018	4 327 000.00	4 327 000.00/3 333 123.66 = 1.2981
2019	4 985 972.31	4 985 972.31/4 327 000.00 = 1.1522

The average eligible income is calculated in Eq. 2 (€).

$$\frac{(3\,333\,123.66 + 4\,327\,000.00 + 4\,985\,972.3)}{3} = 4\,215\,365.12 \tag{2}$$

The average % increase/decrease is calculated in Eq. 3 (%).

$$\frac{(1.2981 + 1.1522)}{4} = 1.22 \tag{3}$$

The value obtained is squared: $1.22^2 = 1.488$.

The adjusted gross revenue is calculated in Eq. 4.

$$4\,215\,365.32 \cdot 1.488 = 6\,274\,149.74\ AGR \tag{4}$$

The value is verified by AIP (Approved insurance provider) which then uses it to calculate the insurance coverage.

The insurance program offers different levels of income coverage. The insured per- son may choose the package that best suits to the needs. The packages offered are:

- 80/75 or 80/90 = coverage level of 80 % with the payment of a rate of 75 % or 90 %;
- 75/75 or 75/90 = coverage level of 75 % with payment of a rate of 75 % or 90 %;
- 65/75 or 65/90 = coverage level of 65 % with payment of a rate of 75 % or 90 %.

5. CONCLUSIONS

In the first place, the paper highlights a long-lasting exposure and vulnerability of cultural heritages to natural hazards, the effects of which have not yet been fully mitigated with ex-ante tools. In particular, the paper clarifies that cultural heritages are highly exposed to catastrophic effects due to their geographical and systematic connotation and the rules of public law that govern them. Moreover, this ruling underlies a long-standing problem that involves most of the Italian and world cultural heritage so that the latter, inherently exposed to any hazards – even pandemics – are not adequately protected from an insurance point of view.

Secondly, the paper underlines the evolution of the concept of heritage, from a mere immovable static asset to a real economic industry comparable to a financial institution capable of producing income from cash flow. In relation to this, the more serious the natural hazards result in these cases, the more the heritages take the form of economic companies. As more they are subject to losses, they are unproductive and unable to remedy as non-incomes. Therefore, the second conclusion underlies the delicate managerial and financial situation inherent in an economic, cultural heritage and the pathological consequences that derive from any occurrence of hazards, such as, for example, the COVID-19 pandemic analysed in the case study.

Ultimately, the paper envisages the introduction of an insurance policy, the so called AGR. This approach's benefits rely on limiting the macroeconomic and financial effects, mitigating losses, and declining the risk from natural hazards from a resilience and risk management strategy perspective. Not only could such an elaboration as per the proposed insurance implementation could naturally feed new operational variations of the insurance market, but it would be aimed at mitigating the pathological consequences of a hazard, if only from the point of view of limiting costs and financial damage

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