

FINANCIAL RESPONSIBILITY. A TEMPORAL RISK?

David Ceballos Hornero^a

In Finance, when the context is particularly complex responsibility can be “invisible” from the perspective afforded by time. Hence, temporal risk can usefully be analyzed through the

Greek concepts of time: Chronos (god of duration and sequential time), Kairos (god of opportunity and the moment of time) and Aeon (god of eternity and long-term time).

Keywords: *responsibility, risk, time, finance*

JEL Classification: *G00, B00*

1. INTRODUCTION

Recent years have been characterized by an economic and financial crisis of global proportions and while the many analyses undertaken are largely able to identify its origins and causes (see, for example, Lewis, 2011), it seems much of the blame lies with the markets. Meanwhile, present austerity and credit control policies are arguably proving to be counterproductive increasing unemployment and unpaid debt and undermining the expectations of future generations.

Our modern times are also characterized by the “invisible” degradation of the environment, an imperceptible process if we apply the standard measure of time (Adam, 1998). These invisible hazards, be they in the form of natural or man-made catastrophes, present new threats to our health, well-being, and quality of life, in general.

The current financial crisis can be considered in similar terms: a hazard that is invisible if we apply the standard measure of time and, hence, the low degree of responsibility attached to one of the greatest crises the economic world has known.

Responsibility is a legal concept and, from a logical perspective, a causal phenomenon. Responsibility is the obligation to repair a (negative) effect when the cause can be attributed to the subject’s own actions. A causal phenomenon requires time so that the cause (first) can be associated with the effects (continuation), but if the phenomenon occurs in “invisible” time, then a causal

^a Department of Economic, Financial and Actuarial Mathematics. Faculty of Economics and Business Administration, University of Barcelona. Av. Diagonal 690. Barcelona, E- 08034, Spain, e-mail: ceballos@ub.edu

relation cannot be established between cause and effect.

This paper adopts a time perspective to examine financial responsibility in order to determine when such responsibility might be invisible given a standard or chronological version of time. This invisibility constitutes a temporal risk because it is not an ontological property of financial phenomena, but rather a problem inherent to an analysis with a limited concept of time.

A possible approach to the study of the temporal invisibility of responsibility in Finance lies in the conceptualization of time according to its natural dynamics, that is, its chronological or regular dynamics; its opportunity or punctual dynamics; and, its timeless or eternal dynamics. These dynamics can be analyzed by employing different concepts of time, in particular the concepts represented by the Greek gods of time: Chronos, Kairos and Aeon, the gods of duration, moment and eternity, respectively.

2. RESPONSIBILITY IN FINANCE

Analyses of responsibility are widespread in the financial literature and throughout business: social and corporate responsibility are questions attracting growing interest in the academic literature; codes of ethics and corporate reputation are priority concerns in financial firms; the recent financial crisis has given rise to a broad social and institutional debate concerning responsibility for its consequences, and so on. In this respect, Hawley (1991) studied the ethical dimension of applying the wealth maximization objective to Finance; Gill (2008) explored different orientations toward ethical and social responsibility adopted by corporate core values, and Jin *et al.* (2013) studied the implications of the recent financial meltdown for financial professionals. Symptomatic of the interest generated by this subject was the foundation of the Center for Responsibility in Finance at the University of Zurich in 2011. The Center's aims are to promote education in responsibility in finance and in management and to develop measures and tools (so-called *ethical toolkits*) for the assessment and promotion of the ethical competences of organizations and individuals, among others.

Responsibility can be defined as the legal, moral, or other debt or obligation to repair or satisfy an effect that is the consequence of an action, fault or legal cause. In the rest of this paper, financial responsibility is defined as the process of managing money and other assets in a manner that is considered productive and in the best interests of a financial agent and society. Based on this definition, three dimensions of responsibility in Finance can be distinguished:

First, the need to respect the rules and to be diligent in financial decisions.

Second, the need to pay for the negative consequences of an incorrect financial decision or an unfavorable situation.

Third, the need to be aware of the risks and consequences of one's financial decisions.

This three-part definition implies that being financially responsible involves understanding and applying financial concepts when taking management decisions that address the allocation of funds, as well as showing a concern for accurate reporting and good risk management. Time is of greatest importance in the third of these dimensions, i.e., in managing the risk associated with financial decisions, since in a complex context this risk can be "invisible" from a causal perspective of responsibility.

3. RISK IN FINANCE

In general, risk concerns the expected value of one or more outcomes of one or more future events, in which there is uncertainty about the occurrence of an event and its result, but not about the determination of the events and their associated results. The formal representation of risk in terms of safety management systems sees it as the combination of two components: the likelihood of the occurrence of a hazardous event or exposure; and the severity of injury or ill health that could be caused by the event (Jorion, 2007).

Finance is fundamentally a quantitative science, the development of which, in recent decades, has drawn largely on the fields of Statistics and Mathematics. Here, although a risky situation might have a positive or negative outcome, in Finance a risk tends to be associated solely with the potential harm that may arise from a future event, and which as such can represent an additional cost or loss of a benefit. In Finance, the two components identified above include the likelihood of an unfavorable event (a default), its associated losses, sources and the exposure to risk (uncertain variables, prevention measures, guarantees, possibility of assuming the loss) and the term (time horizon, expiration conditions, etc.). From this perspective, financial risk is often defined as an unexpected loss or the variability of returns that are worse than the target or reference returns. The impact of this unexpected loss or variation must be mitigated or transferred so as to guarantee the benefits or value. Such a strategy is referred to as risk management, and consists in the mitigation or transfer of risk by controlling the risk components.

More formally, therefore, risk management is the identification, assessment and prioritization of risks to minimize, monitor and control the probability or the impact of unfortunate events. Strategies for managing risk include transferring the risk to another agent (financial operation), avoiding it (immunization), reducing its negative effects (prevention), accepting some or all of its effects (responsibility) or compensating for it with other unexpected events (diversification).

There are several ways of classifying financial risk. However, perhaps the most complete are the recommendations given by the Basel II Accord. This document, published by the Bank for International Settlements, is a framework for ensuring that any holding company that is the parent entity within a banking group captures the risk of the whole banking group. Within this framework, the document specifically cites market, credit and operational risks. Here, a fourth financial risk is also considered, namely, that of systemic risk.

- Market risk is the possibility of unfavorable developments or behavior in the nominal economy (prices). In the case of intangibles, market risk is related to financial markets and the possible market prices of intangibles (in general, market value over book value).
- Credit risk is the possibility of loss due to the impossibility of payment or default on a transaction. In the case of intangibles, credit risk is related to loss of the advantage or the utility of the immaterial part.
- Operational risk is the possibility of loss resulting from inadequate or failed internal processes, people and systems or from external events. This definition includes legal risk, but excludes strategic and reputational risk. Legal risk is the possibility of an unfavorable change in the regulations, fraud or self-regulation. In the case of intangibles, operational risk is related to model errors in the valuation of the immaterial part, a lack or change in protection of the intangible, or an incorrect or negligent use of regulations to define or to value intangibles.
- Systemic risk is the possibility of global fallout or the possibility of contagion and the prolongation of a disastrous event. In the case of intangibles, systemic risk is related to the scenario in which only the material part has value, a globally deficient definition of intangible value, or the contagion of the negative effects of the immaterial part on the material part of the company or on other companies or intangibles.

4. GREEK GODS OF TIME

In primitive societies, time was not understood as a physical coordinate. It was explained as a powerful mysterious force that dominated events and as such time could be good or bad, favorable or hostile¹. In primitive cultures, a cyclical idea of time was implicit in beliefs, pictures and calendars. However, in Greek culture we can begin to observe characteristics of a linear notion of time, above all in its poems and tragedies, where death, desperation and happiness substitute the eternal, cyclical evolution in the narration of stories.

¹ Franz (1978) and Adam (2004) have studied the conception of time in early civilization and its subsequent evolution.

In Greek mythology, time exists in relation to change and motion, without a clear distinction being drawn between these concepts². Time is conceptualized through the divine trilogy of Aeon, Chronos, and Kairos:

- Aeon is the god of absolute and perfect time, representing eternity, duration without beginning or end, the simultaneity of all times; and, it is frequently, represented by cyclical motion.
- Chronos is the god of time in its empirical dimension, i.e., time's measure. This time is mobile, limited and imperfect. In the words of Plato, it is "a moving image of eternity". Chronos is a successive presence or image of the mirror of Aeon. It personifies order in succession, harmony in finite durations. It is the time that is measurable, the common time of humans.
- Kairos is the favorable moment, the non-regular opportunity. It is the fair point or the equilibrium value for right decisions. It is similar to the time for human activity, to use Jaques' (1984) terminology. It is a technical time for action and decision dependent on context and on the intelligence needed to benefit fully, according to Plato in *The Republic*, II, 370b and 374c. Kairos captures the risk of action and ultimate success.

The above triad sets three wills to work on the temporal analysis of an event or situation: timeless analysis (Aeon), relational study (Chronos) and the use of the moment (Kairos).

5. ANALYSIS

The Greeks' divine triad of time offers an interesting approach to the analysis of financial responsibility given the way in which time and risk are interrelated. A financial obligation involves both obvious temporal and risk components. The former is incurred at specific moments: at the outset of the transaction, during the flow of payments and the execution of all obligations; the latter arises from the fact that a financial obligation is hypothetical, and as such it can occur randomly or the monetary quantity and moment that define it are not necessary for its execution.

Responsibility can be considered invisible when it is not possible to establish a temporal link between the cause and the effect, i.e., when the complex context does not allow us to see a phenomenon simply in terms of its causes and effects. This absence of a temporal link (or the impossibility of envisaging such a link) can affect the rules of the transaction, the credit payments or the risk management itself, that is, the components of financial responsibility.

² Aristotle in *Physics* IV, II, 220b comments that time is measured by motion, but also that motion is measured by time. Plato in *Timaeus* compares time with cyclical motion.

According to the particular conceptualization of time, in keeping that is with Greek mythology (see discussion above), time may be eternal, chronological or representative of the favorable moment. These visions of time suppose timeless (Aeon), sequential (Chronos), or punctual dynamics (Kairos).

Aeon vision

Taking the perspective afforded by Aeon, our time analysis is cyclical, without neither beginning nor end. The cycle is not unique, because each phenomenon can be represented in its perfect movement that shows it as eternal. From this time vision, the visibility of the causal responsibility depends on the description of the dynamics because the cycle converts the causal dynamics in a repetition. Thus, the components - payments and risk management - are easy to represent temporally since the origin is the financial operation, the development the actions and the end is the result of the debt payments and the profits and losses. And all these elements have to known in order to be able to apply a cyclical time or perspective, and therefore they are time visible. However, the respect of rules is not a repetitive phenomenon and overall it can not be a clear origin. Then, this responsibility component can be time invisible from a cyclical time vision, and it is necessary reputation or confidence substitute the causal relation in order to maintain the long-term perspective.

Chronos vision

Taking the perspective afforded by Chronos is similar to adopting a Newtonian or logical vision of time, a regular and sequential order. This order is clear in any analysis of the rules and of the possibility of paying off debt, since the actions that cause these components are logical. The respect and the payment follow an ordered sequence that is described in a chronological time, but the risk management is dependent on context because the order and connections among the relations of management can not be simple and the sequence can be broken. In a complex context, the risk management can not be causal because the temporal order between decisions, results and relations can be different. Then, which a Newtonian time the responsibility will be invisible.

Kairos vision

Taking the perspective afforded by Kairos supposes an opportunistic perspective in relation to the event or the favorable result. This means that the credit payments and the risk management are not temporally invisible, since the profit to be garnered from the opportunity will be known. The result can be known to evaluate the success, and then the time relation between the payment or the management strategy and the result. Yet the rules may be temporally invisible because an opportunistic perspective supposes that the principal relation is between decision/action and result/success. Then the rules can be separated of the result in the temporal relationship and to be invisible this component of financial responsibility.

Invisible responsibility

The above time analysis can be summarized in the table below, which shows the components of financial responsibility that may be invisible. In these instances, the possibility of time invisibility shows that financial responsibility cannot be an obligation because of the fragility of the temporal relation between cause and effect.

The above time analysis can be summarized in the table below, which shows the components of financial responsibility that may be invisible. In these instances, responsibility is not an obligation because of the fragility of the temporal relation between the cause and effect.

Table 1. The visibility of the components of financial responsibility according to the conceptualization of time

	Respect for rules	Credit to pay	Risk management
Aeon	Invisible	Visible	Visible
Chronos	Visible	Visible	Invisible
Kairos	Invisible	Visible	Visible

The invisibility of certain components of financial responsibility can result in the impossibility of determining full responsibility. And, as in the current financial crisis, there is a socialization of this responsibility. This is because, from a chronological vision, the context is overly complex to be able to comprehend the strategies of risk management before and during the crisis. As such, the result is simply that everybody has participated in this risk.

If we adopt an Aeon or Kairos perspective, it is clear who is responsible for the crisis; the management was at fault. But in these cases, the respect for the rules may be invisible and if the managers are not the same individuals as those who entered into the operation, then not all the responsibility can be laid at their door.

6. CONCLUSIONS

This paper has examined the make-up of financial responsibility and the possibility of its temporal invisibility. In so doing, it has distinguished three components of financial responsibility and three conceptualizations of time. In general, there would appear to be a component of financial responsibility that is time invisible and as such a temporal risk can exist in requiring financial responsibility for the phenomenon.

Structuring an analysis of responsibility according to the time invisibility of its components can furnish alternative strategies for avoiding or detecting financial responsibilities. Reputation, opportunity and complexity are the characteristics

for which a financial manager should be able to generate invisibility from the perspective afforded by time, that is, between his or her decisions and actions with their effects.

REFERENCES

- [1] ADAM, B. (1998). *Timescapes of Modernity: The Environmental and Invisible Hazards*. London, Routledge.
- [2] ADAM, B. (2004). *Time*. Cambridge, Polity Press.
- [3] BANK OF INTERNATIONAL SETTLEMENTS (2004). *International Convergence of Capital Measurement and Capital Standards. A Revised Framework*. Basel Committee on Banking Supervision.
- [4] CAMPILLO, A. (1991). "Aión, Chrónos y Kairós: la concepción del tiempo en la Grecia Clásica". *La otra Historia*, Vol. 3, p. 33-70.
- [5] CEBALLOS, D. (2004). *Análisis del tiempo como variable en Economía financiera*. Doctoral Thesis. Universitat de Barcelona. Spain.
- [6] FRANZ, M.L. (1978). *Time: Rhythm and Repose*. London, Thames & Hudson.
- [7] GILL, A. (2008). "Corporate Governance as Social Responsibility: A Research Agenda". *Berkeley Journal of International Law*, Vol. 26, No. 2, p. 452-477.
- [8] GUITTON, H. (1970). *A la recherché du temps économique*. Paris, Fayard.
- [9] HAWLEY, D.D. (1991). "Business ethics and Social Responsibility in Finance Instruction: An Abdication of Responsibility". *Journal of Business Ethics*, Vol. 10, No. 9, p. 711-721.
- [10] JAQUES, E. (1982). *The Form of Time*. New York, Crane Russak.
- [11] JIN, K.G.; DROZDENKO, R.; DELOUGHY, S. (2011). "The Role of Corporate Value Clusters in Ethics, Social Responsibility, and Performance: A Study of Financial Professionals and Implications for the Financial Meltdown". *Journal of Business Ethics*, Vol. 112, No. 1, p. 15-24.
- [12] JORION, P. (2007). *Financial Risk Manager Handbook*. New Jersey, John Wiley & Sons.
- [13] LEWIS, M. (2011). *Boomerang – Travels in the New Third World*. New York, Norton.
- [14] RENDTORFF, J.D. (2009). *Responsibility, Ethics and Legitimacy of Corporations*. Copenhagen, Copenhagen Business School Press.
- [15] RODRIGUEZ, A. (1994). *Matemática de la financiación*. Barcelona, Universitat de Barcelona.