

# Governing Turbulence, Risk and Opportunities in the Complexity Age



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Edited by

Antonio Bazilio Floriani Neto,  
Enrique Caceres Nieto,  
Guglielmo Chiodi  
and Sara Petroccia

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# THE COMPLEX SYSTEM APPROACH AS A GLOBAL THINK TANK

ANDREA PITASI

As the President of World Complexity Science Academy (WCSA), I am proud and honoured to sum up its vision, strategy and policy. In a nutshell, the WCSA is a think tank epistemologically inspired by complex system concepts and models which represent the cognitive toolkit for problem setting, problem solving and agenda setting in relation to the key, global challenges of our times, mainly focusing on political sciences as the multiplex for dealing with complex challenges.

Applied research, policy modeling, strategic consulting, lawmaking, top educational programmes and high quality academic publishing are the key ways the WCSA empowers and disseminates its outcomes. For example, in seven years, the WCSA has published over 30 books in five book collections for different international publishers, one journal recently replaced by a more prestigious one, SRBS by Wiley, organized two summer schools and three editions of its prestigious Medal. The WCSA has also signed several alliances and partnerships with large networks and federations such as ISA, IFCA, IFSR, SFAI and many others, cobranding worldwide events and projects. Nevertheless, the WCSA's key strength is to maintain small numbers in its selected membership (not high density but a high variety to let complex systems evolve and to cross-fertilize systems science from around the world) as it is shaped as a think tank as described above.

There is no complexity without systems. Systems Theory evolved for their traditional "classic" shape as rather rigid designs mostly represented by Parsons' and Beer's conceptions of a system. These kinds of systems were rigid, "organic", and often based on a value-oriented distinction between in and out. This means they were not able to manage complexity or emergence. Then the key shift was dramatically inspired by von Foerster, von Glasersfeld, Luhmann and others by designing complex systems epistemology, an approach to let them evolve viable and functional coding and programs, and to deal with a higher level of risk,

uncertainty, contingency and emergence to let the system evolve dynamically. There is no complexity without systems.

Some drifts of reasoning about complexity without systems, and some semantic drifts between multidisciplinary science and common sense (for example about “chaos”), created the misleading implosion of so called “complexity theories” into the celebration of common sense fatalism, inactivity and passivity. It is a tricky matter which leads to the denial of knowledge, research and acting strategically. If the classic systemic theory was too confident in planning and structuring, the complexity drift is a useless slippery slope leading to the irritating and resonant noise of contingent moods and emotions. This is the opposite of viability based on a complex system of a filtered and coded selection of noise.

The core of this book is about the systemic management of contingency and emergence. The level of uncertainty has rapidly increased. Frequently, an overload of irritating and resonant noise leads to risk, and it also makes it difficult to construct and model possible consequences of any decision set. Therefore, in such conditions many variables should be taken into consideration. It affects all spheres of social life: economic, social and political; as well as every level of decision-making, the best strategy to deal with uncertainty is to share and expand knowledge from different domains beyond the disciplinary and scientific borders with a problem-setting, problem-solving agenda setting aimed at policy modelling.

# ORGULLO Y EXITO EN UNA EMPRESA DE VANGUARDIA

ANGEL ANTONIO ALBERTO

This case study aims to analyze the different alternatives that a businessman needs to bear in mind when taking a decision as regards investment, considering the important load of risk affecting contingent choices. When there can be no certainty whether the end result will be success or failure, the businessman's experience, combined with the business's reputation and capital, play a key role.

We know that before taking a decision, different outlines and hypotheses should be considered, but nothing will guarantee eventual success, as the result depends on the correct use of our strengths and weaknesses, besides the correct interpretation of the opportunities, minimizing any possible threats as much as possible.

The context is always changing, that is why we analyze the businessman considering his main characteristics, abilities, attributes, mission, and business vision. This is not enough if one fails to see the correct background, take the opportune decision, or use the appropriate strategy to achieve the expected results.

This particular case happens in the field of the Argentine Economy, which is characterized by its cyclical movements – growth periods, stability and stagnation – circumstances under which, to achieve success we not only depend on the internal market doing well, but also on the exterior market doing well, to make incursions into a globalized world.

For the existence of successful businessmen, the government, the institutions, the committees and the NGOs should watch over this group's interests, allowing an appropriate framework for its development. Taking into account that at the least sign of uncertainty investments are discouraged, and businessmen are on tenterhooks, since the tiniest mistake in their decisions would put their whole patrimony at risk.

This study shows that when a businessman takes his decisions, he does so not only by following his human nature, vision and values, but also by keeping one eye firmly on his community.

Boglione's business background dates back to 1881 when his grandfather arrived in Argentina, from Cuneo in Piedmont, Italy. He dedicated himself to working the land and then buying a flour mill. Later, he opened a general store with his children. One of them, Federico Boglione's father, founded the Santa Clara Oil Factory in 1939, which in the 1980s was ranked number one in the country due to its famous oil brand "Patito".

Federico Boglione, a full member of the Los Lazos agroindustrial group and leader of the oil company Santa Clara, which he received as a family legacy, has always made it clear that the challenge in Argentina involves the participation of business people. He says: "We cannot expect to have an industrial country, where the employer makes demands of the government without offering proof of true commitment and support. If we do not set the example as entrepreneurs, we should not expect foreign firms to come to invest in our country."

He has been an outstanding leader in business as well as in institutions of our country. He demonstrated his leadership skills when he worked at the Stock Market, the Stock Exchange in Rosario and other institutions of which he was a member.

He believes that Argentina has gone through different economic stages in its history. It is at those moments that the business community must possess the sufficient capacity to interpret the context and make good decisions.

He has always emphasized that Argentina is one of the most important producers of raw materials; but it lacks a business community that adds value to its products. For this reason, he attaches so much importance to industry. He has witnessed global growth. Thus, in his everyday life, he has thought about how the industrial sector can match this growth, by expanding the range of its products and the acquisition of leading technology to obtain high value-added products.

He considered that a major leap at an entrepreneurial level would come with the consolidation of the strategy, which allowed him to add value to his products and thus establish himself in a sector with significant competitive advantages. That is how he developed as a leader in his different business units, until the dairy sector offered him a great opportunity due to the changes in the economic context that became more competitive for the domestic and foreign markets.

"S.A. La Sibila" is a business unit that had already been established by the brand Purísima. With this company he began to produce powdered milk at the well-known Rosarina company, Cotar.

Federico Boglione is considered one of the four largest dairy producers in the country, due to his outstanding production in his own dairy farms.

He has never neglected his values and has always been clear about his mission and business vision. He has always looked to the long term. He is also aware that finding industrial activity that adds value to its products will give impetus to the transformation of the country.

This new challenge that Mr. Boglione is facing implies a personal and entrepreneurial commitment. The fact that he returns to the industrial activity adding value to his products, gives him one more opportunity to make a name for himself as an entrepreneur.

In a decade he has managed to give solutions to the chains of super and hypermarkets as well as the industrial and public sectors. He has experienced enormous growth thanks to his main product, milk powder; he has created new ones and entered new markets. With the optimization of costs, he has managed to consolidate himself at regional, national, and international levels.

All this growth has allowed him to develop an important competitive advantage, based on his vision and the implementation of the appropriate strategies, consolidating it as the second leading brand in the national market and positioning it as a reference in the world market.

When acquiring the closed plant this visionary entrepreneur did the commissioning and equipped it with cutting-edge technologies. This allowed him to take the “big leap” to the global market. He has achieved the internationalization of his company by taking his products to Oceania, Asia, and a great part of Latin America. Thus, he has positioned his products in the global market and holds his own alongside the world’s leading companies in the sector.

At the beginning of the case study, it was important to ask ourselves what was the motivation that had moved Boglione to acquire an industrial plant. Although he was an entrepreneur, the dairy product industry was unknown to him.

It was also good to consider the rapid growth it had in this industry, compared with others. This fact could be attributed mainly to his virtues and entrepreneurial capacity. In a short time, it was consolidated at a regional and national level, and then internationalized as a global company.

The leadership exercised by Mr. Boglione and his CEO, Jorge Estévez, has allowed him to achieve significant growth that nobody would have predicted.

In making decisions of this magnitude, we must distinguish who is an entrepreneur and who is not. This influences not only the entrepreneurial experience but also the skills or characteristics of the entrepreneur, which are crucial in the successful implementation of competitive strategies.

The present work is focused on analyzing the situation of those people who, by their very nature, have been entrepreneurs and once again have confirmed their skills in leading and developing ambitious projects by using appropriate strategies.

Let us ask ourselves: What characteristics do they possess? What do they have in common? What leads them to constantly face new challenges, even if they are already financially consolidated? Does this particularity characterize them or is it perhaps an innate force that is never lost? What is it that influences them as far as their finances are concerned? Is it their social conscience? Is it their values? Or is it their commitment to their stakeholders? What inspires them to take on new challenges? Do they aim at helping directly or indirectly their communities and the people who are part of them?

Society must give them the right framework so that this type of person, called an entrepreneur, can develop normally in this changing world.

After having developed the case study “S.A. The Sibila”, whose well-known brand is Purísima and whose owner is Mr. Federico Boglione, we are able to identify the characteristics common to many of the successful entrepreneurs of our country.

In the first stage, the motivation to undertake a project is analyzed, the business idea is identified and the company project is elaborated. Later, its implementation identifies the final decision to create the company. Although the actions and commitments of the entrepreneur with the project are initiated in the previous stage, resources must be gathered and organized in addition to bring tangible and intangible assets to bear. Then, in the initial development of the company, the entrepreneur must face the challenges of management during the early, often turbulent, years as both the project and his own management capacity will be tested in the market.

According to MacClelland (1961), the main characteristic of an entrepreneur must be the need for achievement, which is the result of independence, self-confidence, perseverance, tolerance of ambiguity and risk.

Jenings (1993) considers an entrepreneur to be the person who founded a company. This definition is the most commonly accepted, due to its pragmatism.

Shapero emphasizes the process of creating the company, considering it a social, economic and cultural fact (Shapero 1984, Gibb and Ritchie 1982, Buame 1992).

This work clearly identifies who is an entrepreneur and who is not. The entrepreneur is characterized by his ability to take on new challenges, his great intuition, his ability to face risks and finally his dedication to fulfill

his initial promise which is to create a new company or to improve an existing one. All along his path to success, he must first have a thorough knowledge of the context, a clear scenario, a clear mission, and a vision for the company and knowledge of its strengths and weaknesses. He has to identify the business opportunity and the correct implementation of his strategy, which allows him to achieve a sustainable competitive advantage that assures the development in the long term, minimizing the threats of its competitors.

It is evident that all this happens in a given context. In this particular case, it occurs in a population that suffers from a lack of sources of direct and indirect employment due to insufficient industrial activity. The proposal in this case study is to serve as a source of inspiration and motivation to other entrepreneurs who are facing a challenge with similar characteristics. Regardless of the decision that they adopt, they should always consider the benefits that their proposal will generate in their stakeholders by using not only their experience but also their skills and professionalism. We aim to build a country with an industrial base, productive development, and full employment.

## INTRODUCTION

### GOVERNING TURBULENCE, RISK AND OPPORTUNITIES IN THE COMPLEXITY AGE

ANTONIO BAZILIO FLORIANI NETO,  
ENRIQUE CÁCERES NIETO,  
GUGLIELMO CHIODI AND SARA PETROCCIA

This book, organized by WCSA, is composed of several articles that explore complexity in its most varied aspects. The solutions to contemporary problems, whatever they may be, require an interdisciplinary vision, far beyond the reductionist perspective. The study of complex systems, however, does not have the capacity to offer ready answers to the challenges of humanity. On the contrary, it points to the increase in uncertainty and the need to control variables. From another angle, this does not mean, therefore, that we should simply ignore the social, economic, and political phenomena that are all around us. What this book seeks to demonstrate is the importance of knowledge being disseminated. In addition, it is imperative that different sciences exchange ideas, theories, and scientific advances.

To try to demonstrate this, let us briefly discuss what each article explores.

In Chiodi's paper, there are two intertwined aspects worth emphasizing: the first is the supposed close connection between a theoretical framework and certain pathological events, the second is the obstinate persistence of austerity measures despite their fragile foundations (both theoretical and empirical) on which they are supposed to stand.

These two aspects may usefully be taken as a starting point for extending and generalizing their very content. It will be argued, in fact, that mainstream (or standard, neoclassical or dominant) economic theory as a whole might be considered as basically crucial to understand, and

somehow bear considerable ‘responsibility’ for, other pathological events. This naturally suggests the possibility of forging a critique of mainstream economic theory from a new and different perspective compared with those that have been pursued up till now.

Moreover, a critique will be made of mainstream economic theory by arguing that the latter is characterized by some ‘criminogenic’ features, meaning by this that it contains elements which can be viewed as a potential source of inspiration and justification for masking, and thus, though unintentionally nevertheless, bearing responsibility for various ‘social crimes’ – the latter concept conveying those human actions or policies that have pernicious consequences for human beings.

Dominici’s paper has as its the main objectives (i) to define the limits of a Hypercomplex (and Interconnected) Society by analysing its risks and implications, (ii) to highlight the urgency of a systemic approach to complexity, and (iii) to propose a hypothetical “New Humanism” which – according to the author – should be a kind of humanism whose main concern is not the “Technique”, but the “Person”.

By considering the fact that an anthropological metamorphosis is taking place due to the current ecosystem of communication which is causing radical changes in codes, cultures, and in the hierarchical procedures of production and sharing (disintermediation), an opportunity in favour of elites and exclusive social groups seems to have come into being.

One of the consequences brought about by Dominici is that the so-called hypertechnological civilization does need “not only a renewed concern about rules and rights, but above all a systemic approach to complexity, putting into close contact knowledge and skills, too often kept far apart”. In this connection, he suggests a radical revision of the very concept of “Person”, which in turn obliges us to rethink in a new fashion “Humanity” as well as its profound interrelations with every kind of technical and technological issue. Moreover, since ethics is obviously concerned with action, Dominici – borrowing from Jonas – maintains: “The qualitatively novel nature of certain of our actions has opened up a whole new dimension of ethical relevance for which there is no precedent in the standards and canons of traditional ethics.”

As a consequence, one of the theses of the author is that innovation should mean questioning consolidated fields of knowledge and methods, as well as upsetting individual and collective imagination, not to mention unbalancing equilibriums. It should also mean abandoning certainty in favour of uncertainty, thereby rendering systems and their spaces for communication and relationships far more vulnerable.

One crucial corollary of Dominici's thesis is thus the real need for "significant investments in culture, in education, and in schooling, within a general policy of revamping the humanities and humanistic studies, for too long considered unimportant because they are (at least, apparently) unable to produce "outcomes" that are "measurable" in quantitative terms".

Ditta's paper intends to show the possible reasons for the success of austerity policies despite the theoretical weaknesses of the underlying macroeconomic theories sustaining such policies.

It is argued that neither the literature on expansionary fiscal adjustments, nor the more recent thesis regarding the obstacles to growth arising from a threshold level of the Debt/GDP ratio (90%) can justify, on the basis of theoretical and empirical analysis, the austerity policies. The issue has contours that outlast economic theory. The same applies to another related issue as well, that of the relative acceptance of Keynes's General Theory (GT).

In agreement with the author, the main reasons that could explain such a situation lie in two orders of concerns: (i) the general tendency towards the recovery of autonomy by the market-autonomy that has been limited in European countries since the Second World War in the context of the construction of the social state; and (ii) the lack of trust in the state and its agents. Keynesian proposals and compatibilities are impossible in the climate of general discredit that currently surrounds politics and politicians.

Public opinion is no longer inclined to accept the implicit social contract that the Keynesian approach implies, due to the general discredit that surrounds the public sector and 'politics' in general. So, to answer the question of R. Shiller, quoted at the beginning of the paper: "Why is there such strong political support for fiscal austerity, for government cuts and layoffs, at a time of widespread unemployment?", the author says: "We must look beyond the mere economic discourse; the ways in which the ideas assert themselves should also be examined as well as the social historical context and the general political and social conditions in which they arise."

The post-Second World War order, characterizing the 25 years up to the 1970s, took place in the cultural and political climate dominated by the so-called neoclassical synthesis of the GT. The necessary fiscal and monetary policy instruments devised to reach income levels compatible with full employment, all belonged to this theoretical and political framework, constituting the macroeconomic consensus throughout this period, labeled as the 'Golden Age'.

This, concludes the author, was "the era of embedded capitalism, in which modern institutions of social protection and regulation were

expanded, where economic growth was also embedded within the particular social and political norms set by the state”.

The conclusion reached by the paper is that, since the 1970s, starting after the first oil crisis: “There has been a progressive movement toward a ‘dis-embedding capitalism’ [...] and, with the strengthening of the neo-liberalism agenda, an inverse process of deregulation and increasing subordination of the general interests of society to market forces took place.”

So, the political struggle between the ‘dis-embedding’ of free market forces and the society of embedded welfare protection, concludes the author, is “a very interesting and useful background for a better understanding of the topics covered in this paper as well as of the complexity of the current economic debate”.

According to Amaral, Freitas, Fraga, Moyses, and Martins de Souza, it is well known that peripheral regions face particular difficulties in conducting their economic policies according to the dictates of macroeconomic consensus dominated by orthodoxy, especially in the current context of financial globalization.

A special case has been that of Brazil and of its enormous interest rates. Brazilian interest rates have remained extremely high since the stabilization of the economy in 1994, after the successful Real Plan. Why did real interest rates in Brazil remain high even after the adoption of a floating exchange rate in 1999? Why are real interest rates in Brazil still so high today? The puzzle of Brazil’s high interest rates has generated a lot of attention and a huge literature trying to find an explanation to this peculiar stylized fact. Numerous explanations have been tried, but none of them were, in our view, able to give a convincing and definitive explanation to this puzzle.

In an article published in a well-known Brazilian newspaper in January 2017, A. Lara Resende reiterated the question, pointing out the further difficulty of explaining the high interest rates in Brazil in the context of the deep recession of the last two years. He asks: “How is it possible that after two consecutive years of falling GDP, rising unemployment, which already exceeds 12% of the workforce, the interest rate in Brazil remains so high, while in the developed world interest rates are exceptionally low?” Lara Resende reviews the most well-known explanations proposed by the orthodox economic theory, noting their inadequacy, concluding that it is worth abandoning all preconceived ideas: “The cost of intellectual conservatism on monetary issues during the chronic inflation of the past century was too high.”

In December 2016, the authors of a CEPR paper with an explicit title followed a different path. They maintained that the answer to this question lay outside orthodox macroeconomic theories. Brazil's high interest rates are due not to the risk of default on public debt or to a deficiency of savings, or to any other factor of macroeconomic orthodoxy, but to the Brazilian Monetary Committee of the Central Bank who has decided to make them this high.

Today the real Selic rate (the nominal official interest rate set up by Copom (Monetary Policy Committee) minus the rate of inflation) is still higher than it has been for most of the last eight years, because Brazil's inflation fell faster than the Selic rate.

So, why did the Central Bank subject the Brazilian economy to such unnecessary treatment? The most obvious answer, according to the authors, is the politically powerful influence of Brazil's financial sector.

This paper contributes to an understanding of these complex questions by providing a useful analysis of the Brazilian banking sector's revenues and profits in recent years that could suggest a complementary explanation to the Central Bank policy. The spectacular financial results achieved by the Brazilian banks contrast with the low dynamism of the economy, as reflected by the modest or negative GDP growth rates since 2011. Is there a reason to think that Brazilian Central Bank policy in the last decades has been influenced by the interests of the banking sector, facing a deep restructuring after the stabilization of the economy and the subsequent loss of the big and easy gains offered by the high inflation period?

Marcelo Amaral, Jessica Souza Maia, and Maria Clara Martins de Souza discuss in their article the effects of small companies on the generation of employment and income in Brazil. The authors delimited the theme in the mid-Paraíba do Sul Valley Region in Rio de Janeiro State, an area that has contributed to the country's economy for many years: from coffee cycles to, more recently, metallurgy and metalworking. It is revealed that the interaction between technology, knowledge, and governmental initiatives, provides an increase in the efficiency of local business. Consequently, this way of acting contributes to development, a concept that is not restricted to the economic or social point of view, understood as a process of expansion of individual freedoms.

Lara Bonemer Azevedo da Rocha and Marcia Carla Pereira Ribeiro propose the application of the theory of the design of mechanisms as a way to fill the gaps and to address controversies arising from the incompleteness of contracts. The topic is contextualized within the scope of the New Institutional Economy from the point of view of the theory of transaction costs. It follows from the idea that in concluding a contract the

parties seek legal certainty in order to try to anticipate all possible circumstances. However, the *ex-ante* prediction is impracticable given the complexity of the business relationship, in addition to predicting a maximum number of possible situations, making contract writing excessively costly and even rendering the business unmanageable and the making of contracts, as a rule, incomplete. In this turbulence, the theme is interesting in providing security mechanisms to the contracting parties and, as a consequence, leading to the conclusion of contracts.

Space and time in the globalization era are the object of the work written by Michela Luzi. The author exposes the impact of technological progress not only on people's lives, but also on capital, consumer objects, and the way they relate. As a consequence, there is disintegration of traditional, man-built systems and a new conception of territoriality. From the reading of Anthony Giddens and other authors, the article accurately exposes the problem, which is directly related to the theme of this book.

Knowledge in the digital age is the theme explored by Edmondo Grassi in his paper. The author seeks to understand how the imposition of technological progress provided by digital technologies, affects the way we communicate. While human elements are more private and emotional, virtual space opens the door to exposure, for the possibility of large-scale storage in hardware or cloud memories. In any case, virtual and digital languages are a part of reality and should not be viewed as a parallel path. Because of this, they deserve research, especially for the effects on our brains and our way of relating. Antonio Bazilio Floriani Neto explores governing turbulence in the Brazilian social security system. The Latin American country has undergone a pension reform that has been provoking huge controversy, with the existence of a financial deficit and counter demonstrations by the population who consider it too severe. In this sense, the paper, making use of complexity, examines motivating issues of social security reform, such as changes in the social structure and the economic argument. In the end, the article exposes the existence of mechanisms that compromise the actuarial balance of the protective system, as well as the need for the matter to be deliberated in advance to avoid a crisis of legitimacy.

Enrique Cáceres Nieto approaches with proficiency a new paradigm, denominated by the author as a Complex Legal Constructivism that interferes in the phenomenon of legal globalization. In the paper, he addresses progress both in integrating complexity as well as in cognitive sciences.

Marcelo Amaral, Arlindo Freitas, Anderson Fraga and Maria Clara Martins de Souza examine the issue of corporate governance in banks

managed by the Brazilian State. The authors state that the term is widely used, but they seek to examine the adoption of this mechanism in public banks and, more specifically, in the case of the Caixa Econômica Federal.

Daniel Rocha Chaves, in his paper, approaches fair trade as an alternative mechanism to those of traditional international exchange, considering it to be more feasible and inclusive, especially for developing countries. The author uses the Luhmanian perspective as a framework.

Belinda Pereira da Cunha, José Flor de Medeiros Junior, José Irialdo Alves Oliveira Silva and Alana Ramos Araujo introduce complexity to the discussion of the environment when studying the transposition of the São Francisco River. The authors advocate an intrinsic relationship between complex thinking and environmental law.

Massimiliano Ruzzeddu gives a multidisciplinary approach to the management of ignorance. The author does not advocate a reductionist view of ignorance, which is limited to lack of information, but rather the use of systemic notions of first and second levels knowledge that can increase scientific activity and relationships.

Gianugo M. Cossi examines Luhmann's theory of information and functional equivalences in technical instruments of communication reproduction. The author explores forms of communication and the mass media using Luhmann as theoretical reference.

Edit Fabó examines the interesting theme of the aim and function of scientific collections in the third millennium, examining the impacts of information and new technologies on people's lives and especially on library science.

Giardiello focused his discussion on some key elements of the critical debate developed around the concept of individualization and the younger generation. Germani's concept of individualization is developed through the identification of some lines of convergence and divergence with Beck's thought. The article ends with a re-elaboration of the concept of marginality, understood both as the regressive side of individualization and interpretative paradigm able to explain the contradictions of youth.

Lombardinilo tries to demonstrate that McLuhan's mediological reflection does not neglect the evolution of the higher education institutions in this age of technological acceleration. Specifically, McLuhan is deeply aware of the particular phase in which universities are no longer elitist functional systems and become instead a mass educational industry. This is the interpretative perspective of McLuhan's interest for the processes of innovation in the field of higher education, highlighting the sociocultural, political, and productive shifts peculiar of the age of economic prosperity.

Angel Antonio Alberto's case study aims to analyse the different alternatives that a businessman needs bears in mind when taking a decision as regards investment, considering the important load of risk affecting contingent choices. When there can be no certainty whether the end result will be success or failure, the businessman's experience, combined with the business's reputation and capital, play a key role.

As the reader can observe, the themes are as varied as possible. However, there is a connection between them: they go beyond epistemological reductionism. Do not expect ready answers to the challenges in this book, but an immersion into complexity, challenges, problems, uncertainty, and the need to consider different perspectives. In order to advance in the cognitive models and to face global challenges, it is indispensable to advance the knowledge of different domains, which is the challenge of the present work.

# CHAPTER ONE

## MARKET TURBULENCE, ECONOMIC CRISIS AND THE ‘CRIMINOGENIC’ FEATURES OF ECONOMIC THEORY

GUGLIELMO CHIODI<sup>1</sup>

### 1. Preamble

Market turbulence and economic crisis have always gone hand in hand in the course of the history. In particular, financial market turbulence has always been on the front line in making economic crises far deeper and long lasting.

As to the causes underlying market turbulence and economic crisis, analysts have often accused policymakers of pursuing the wrong policies. Less frequently, they have concluded that mainstream or dominant economic theory has simply been faulty. However, the severe criticisms of mainstream economic theory in recent years have not seriously shaken its theoretical foundations. As a result, no substantial changes have been undertaken in the economic and financial policies pursued.

Recently, King, in his book *The End of Alchemy* and Romer, in his paper *The Trouble with Macroeconomics*, took a different tack with their respective criticisms: the former by saying that mainstream economic theory offers no encouragement at all to policymakers and bankers to get the hang of money and banking (and so, in this sense, it would be an inadequate theory); and the latter, by highlighting the “intellectual regress” of contemporary macroeconomics—let alone the “imaginary shocks,

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instead of actions that people take” as the causal explanations of events—as in the case of the dynamic stochastic general equilibrium and of real business cycle models.

In this paper, a critique will be made of dominant economic theory by arguing that the latter is being characterized by certain “criminogenic” features, meaning that it contains elements which can be viewed as a potential source of inspiration and justification in committing, though unintentionally, what I shall refer to as “social crimes”—the latter intended as those human actions or policies that have pernicious consequences for human beings.

## 2. The Pervasiveness of Mainstream Economic Theory

Economic thought is generally supposed to be a monolithic and compact set of consistent propositions and coincident with mainstream economic theory—despite the heavy criticism levelled against it, at different times and from different perspectives, by Keynes’s *General Theory* in 1936, and by Sraffa’s *Production of Commodities* in 1960.<sup>2</sup> This point of view, which misleadingly takes for granted the existence of a homogeneous body of economic thought, may be due to the fact that the most widespread economic theory, which above I have referred to as “mainstream economic theory”, now constitutes a worldwide consensus that has existed for the last half century. Moreover, this state of affairs has existed not only within academic circles but also within our familiar social, economic and political institutions, not to mention the day-to-day consciousness of the man in the street. Moreover, its foundational “core” has been taught in almost every school and in almost every university in the world since its inception at the end of the 19<sup>th</sup> century, as if it were the only paradigm to exist within the discipline we think of as “economics”.

The recent economic crisis, which started first in the USA in 2007–2008 and spread afterwards to Europe with unprecedented financial and commodity market turbulence, has produced, and is still producing, devastating effects worldwide. Even those very circumstances seem to have produced no effect whatsoever on the tenets of mainstream economic theory, so much so that its “core” is still considered theoretically robust and safely unassailable—with few exceptions, like those mentioned in the preamble.

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2 It is also worth mentioning the extremely refined methodological criticism by Velupillai, *Computable Foundations for Economics*, which stands on the same footing as the criticisms referred to in the text.

### 3. A New Class of “Social Crimes”

In theory, and unfortunately also in practice, there exist crimes which are already duly recognized and punished by law, like, for example, insider trading, environmental pollution, extortion, bribery, embezzlement, usury, money laundering, and also crimes against humanity, such as extermination, enslavement, torture and apartheid. None of these crimes, however, has been so far directly connected with economic theory.

It should be admitted, on the other hand, that there also exist human actions or policies—no matter how finely conceived or badly designed—that cause great suffering to single individuals and to entire populations, even to generations to come, the effects of which, being not recognized as inhumane, are not recognized and punished as “social crimes”. Harsh austerity measures and uncontrollable morally hazardous financial speculation (not to mention land and water grabbing and the effects produced by the very existence of particular markets, like the blood and the labour markets<sup>3</sup>) are the clearest examples of such human actions or policies. These have quite often produced, and under specific circumstances are in so many respects still producing great and long lasting suffering in populations throughout the world. Albeit, such instances must be viewed in context and vary in extent and degree in different parts of the world. The main thesis of the present paper is that their roots can ultimately be traced back to the “core” of dominant economic theory.

### 4. The “Core” of Mainstream Economic Theory

It might be useful to recall very briefly—even at the cost of being trivially pedantic—the basic principles on which mainstream economic theory is based:

—the principle of maximization, according to which self-interested agents (individuals or firms) aim at maximizing, one independently of the others, their own interest under given constraints. This principle plainly reflects the individualist conception of the economic system, the latter seen as exclusively composed by a set of interacting “monads”;

—the principle of the market-centred economy, according to which the economy consists essentially of a net of exchanges among individuals. This principle has at least the following characterizations: (a) a widespread process of commoditization of any human relation; (b) each relation viewed as a “balance of forces”, meaning that a violation of any one

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3 Cfr. Chiodi and Edwards, *Economics, Ethics, Commodities*.

relation sets in motion forces tending to restore the balance; (c) competition among the people, accomplished by the operational mechanism of the “law of supply and demand” (the price of a commodity rises if demand exceeds supply, falls if supply exceeds demand—hence the relative “scarcity” of the commodities is what ultimately matters for determining exchange-values); (d) the market appears as a self-contained, self-regulating institution which, free of any interference and on well specified assumptions, ultimately leads to a “balanced” or “equilibrium” state, in the precise sense of rendering each and every consumption and production plan compatible with each other and as a whole. From this standpoint, it can be said that mainstream economic theory is being characterized by theoretical propositions which seem apparently “objective” and “free of any value-judgment”, with the consequence that the economic discipline is generally supposed to be a “technical” and a “neutral” science, much like physics or mathematics, rather than a social discipline—as it should be;

—the principle of the “private” vs. the “public”, according to which the “private” is the only recognized fully-fledged constituent part of the system; this would ensure the maximum freedom for each and every individual to act efficiently and therefore would ensure also the best performance of the system as a whole; as a consequence, the “public” is being considered as external or at most as ancillary to the system.<sup>4</sup>

The three principles described above are disseminated—although differently shaped—throughout the relevant economic literature. They, as a whole, convey precisely the idea of what the object and aim of the discipline of economics should be.

## 5. Austerity as a “Social Crime”

Austerity measures are a set of rules designed by policymakers to pursue an improvement in the state’s budget to promote growth. Austerity is being justified by the existence of what is considered “excessive” government spending, usually signalled by what is supposed to be “excessive” public debt. Austerity measures are even thought to be “expansionary”, to the effect of inducing expectations of an improved fiscal policy and thus having the effect of increasing private consumption

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<sup>4</sup> It may be of interest to point out that Debreu, in *Theory of Value*, explicitly considers a special class of economies, “the private ownership economies”.

in the future.<sup>5</sup> Note that the incentives produced by austerity measures are supposed to be effective through the behaviour of private micro entities, such as individual consumers and firms.

The theoretical foundation of such a policy lies in that part of mainstream economic theory which conveys the vision of a market-centred economy and of the public sector and the monetary authority as institutions that stay firmly apart from the market so that they do not interfere with it—the task of the former institution being limited only to the provision of services, such as defence and public administration, which the market cannot provide by itself, whereas the task of the monetary authority is supposed to be limited to the preservation of price stability.

But what do government spending cuts consist of and what exactly do they imply for the populations involved? They consist, in the first place, in the reduction of wages, pensions, transfers, subsidies and benefits, if any, of the existing welfare state, the outcomes of which involve, in their turn, a reduction of employment, prices, consumption, investment and exports. All these effects are easily expressed, as is well known, in standard quantitative data.

But what exactly they imply for the populations involved cannot so easily be expressed analogically. What they ultimately imply, in fact, are highly dangerous phenomena, evidence for which is generally quite difficult to unearth and to quantify precisely in terms of “economic costs”. These include states such as precariousness, insecurity, damage to health, intense frustration and alcoholism. In addition, there are also behavioural consequences such as increased criminality, family and social disruption, and the denial of feasible citizenship. All of these produce pernicious consequences to human beings, as they disrupt the lives of the primary sufferer and that of his or her family. Moreover, more often than not the dignity of people affected is torn away from them as well.

It should also be emphasized how unfair the effect produced by austerity measures is to those people who happen to be located at the bottom of personal income distribution, compared with people located at the top, the former being the most vulnerable to damage when welfare benefits are cut.

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5 Cfr. Giavazzi and Pagano, Can Severe Fiscal Contractions Be Expansionary? Alesina and Perotti, Fiscal Expansion, and Alesina and Ardagna, Tales of Fiscal Adjustment.

## 6. Alternative Visions

The economist's task is usually supposed to finish where quantitative relations can be formulated, easily treated and, quite often, also easily interpreted. This imposed "boundary" of the economist's task, however, is of a highly conventional character and reflects a clear and well defined point of view, which artificially separates what is supposed to pertain to the "economic" enquiry from what is not. But as Hicks aptly points out in an almost unnoticed paper:

The philosopher has told us that the social good is not a thing which can be divided into parts, of which one can be taken and another left; [...] Yet I maintain that in substance the division has sunk in, and has sunk in very deeply. [...] The economist, as such, is still allowed, and even encouraged, to keep within his "own" frontiers; [...] I would now say that if he limits his function in that manner, he does not rise to his responsibilities. It is impossible to make "economic" proposals that do not have "non-economic aspects" [...] when the economist makes a recommendation, he is responsible for it in the round; all aspects of that recommendation, whether he chooses to label them economic or not, are his concern. (Hicks, "A Manifesto", 135–137, italics added.)

The separation between "economic" and "non-economic" aspects is a typical characterization of mainstream economic theory, and it sounds analogous to the separation between "economic science" on the one hand, and "ethics" and "value-judgments" on the other—as principle (ii) recalled above tries to make evident.

The definition of the economic discipline given by the classical economists (Political Economy, in their terminology) is patently in sharp contrast with the definition characterizing mainstream economic theory and summarized by the three principles referred to in § 4 above. Adam Smith's own definition, in fact, brings to the fore that difference very clearly:

Political economy, considered as a branch of the science of a statesman or legislator, proposes two distinct objects: first, to provide a plentiful revenue or subsistence for the people, or more properly to enable them to provide such a revenue or subsistence for themselves; and secondly, to supply the state or commonwealth with a revenue sufficient for the public services. It proposes to enrich both the people and the sovereign. (Smith, *Wealth of Nations*, 375, italics added)

Adam Smith's definition of Political Economy reflects a "vision" of the system radically different from that which comes about from mainstream economic theory (which, by making reference to his well-known "invisible hand", has improperly reduced him to a "market fundamentalist"). Adam Smith's "vision" it is in fact substantially the same as the "vision" maintained throughout the classical period from Ricardo to Marx, and up to Sraffa, who explicitly took it as the basic reference in his own work *Production of Commodities*.

On the opposite side, it is of a paramount importance for the main argument of the present paper to consider Walras' point of view when he discusses and criticizes, in a crucial passage of his *Éléments*, Adam Smith's definition of Political Economy already given above:

To provide a plentiful revenue for the people and to supply the State with a sufficient income are incontestably most worthy aims. [...] But it seems to me that this is not, strictly speaking, the object of a science. Indeed, the distinguishing characteristic of a science is the complete indifference to consequences, good or bad, with which it carries on the pursuit of pure truth. (Walras, *Éléments*, 52, italics added)

Walras' standpoint makes crystal clear the huge difference which exists between two alternative "visions".

## 7. Austerity and the EU

Austerity measures have a long history, which began in the last century and still continue to this day. Witness those adopted by some governments of the EU as the response to the aftermath of the 2007–2008 financial crisis.<sup>6</sup> In every circumstance, they have always been opposed by popular resistance in different ways and with different outcomes, sometimes even with dramatic outcomes, as in the cases of Japan and Germany in the late 1920s—in the latter case, austerity was adopted just before the Nazi period.<sup>7</sup> In each case, the mainstream economic theory of the time did have its own responsibility, in that it gave strong theoretical support to the ruling politicians.

Austerity begun to enter the scene again in the EU soon after the Treaty of Maastricht (1992) was signed. As is well known, the creation of a single European Monetary Union (EMU) required several criteria to be

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6 Cfr. Blyth, *Austerity*, especially ch. 5.

7 Although in a different context, it is worth reading the insightful reflections made by Cassiani, *Il Diritto di Resistenza*.

met by any country wishing to participate in it. One of these criteria was the “sustainability” of its public finances, which was substantiated in two uncorrelated reference values: 3% for the public deficit/GDP ratio and 60% for the public debt/GDP ratio.

As Pasinetti, *The Myth (or Folly)*, rightly pointed out in this connection, no plausible explanation was given as to the reason for those two figures as reference values for the “sustainability” of the public finances. And, what is more, his analysis proves instead the existence of a definite relationship between the two parameters—once a non-increasing public debt/GDP ratio is accepted as the general criterion of sustainability of the public debt.<sup>8</sup> That means that the choice was in a sense “arbitrary”, especially the singling out of the 3% parameter, which “simply sounds foolish” (Pasinetti, *The Myth (or Folly)*, 112) inasmuch as that choice “may entail severe costs on two counts: because it prevents expansionary policies in periods of recession and mass unemployment [...]; and because, on the top of that, it also imposes heavy fines” (ibidem).

Once again, those effects may imply, in their turn, severe and prolonged damage hitting entire populations of human beings. The standard numerical figures, which the economists are accustomed to use to give an immediate and tangible quantitative expression to the typical effects produced by austerity measures, are by themselves unable to convey completely, and perhaps not at all, the real damage produced by those measures.

On further reflection, however, it might be argued that the fixing of those specific reference values springs straightforwardly from the “core” of mainstream economic theory, whose “philosophy” seems firmly based on the strong belief in the market-centred economy, in the “neutral” character of the economic discipline and in the minimization of the “public”. Fixing definite parameters to be universally observed by any economy, independently of its historical, social and institutional specific conditions is the same as putting a straitjacket on the state, in order to make sure that the behavior of the latter does not exceed certain predetermined “boundaries”. In this way it is supposed that all private agents in the economy are able to act in their environment (the market) with far more freedom and flexibility than they otherwise would, in order to achieve their own interests, since they feel more “protected” from the external “interference” of the state.

It is still worth mentioning at least two other “foolish” ideas regarding “parameters”. The first is the 90% limit for the public debt/GDP ratio,

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8 Cfr. the criticism to Pasinetti’s criterion by Harek, *On the Sustainability Area*, and Pasinetti’s reply.