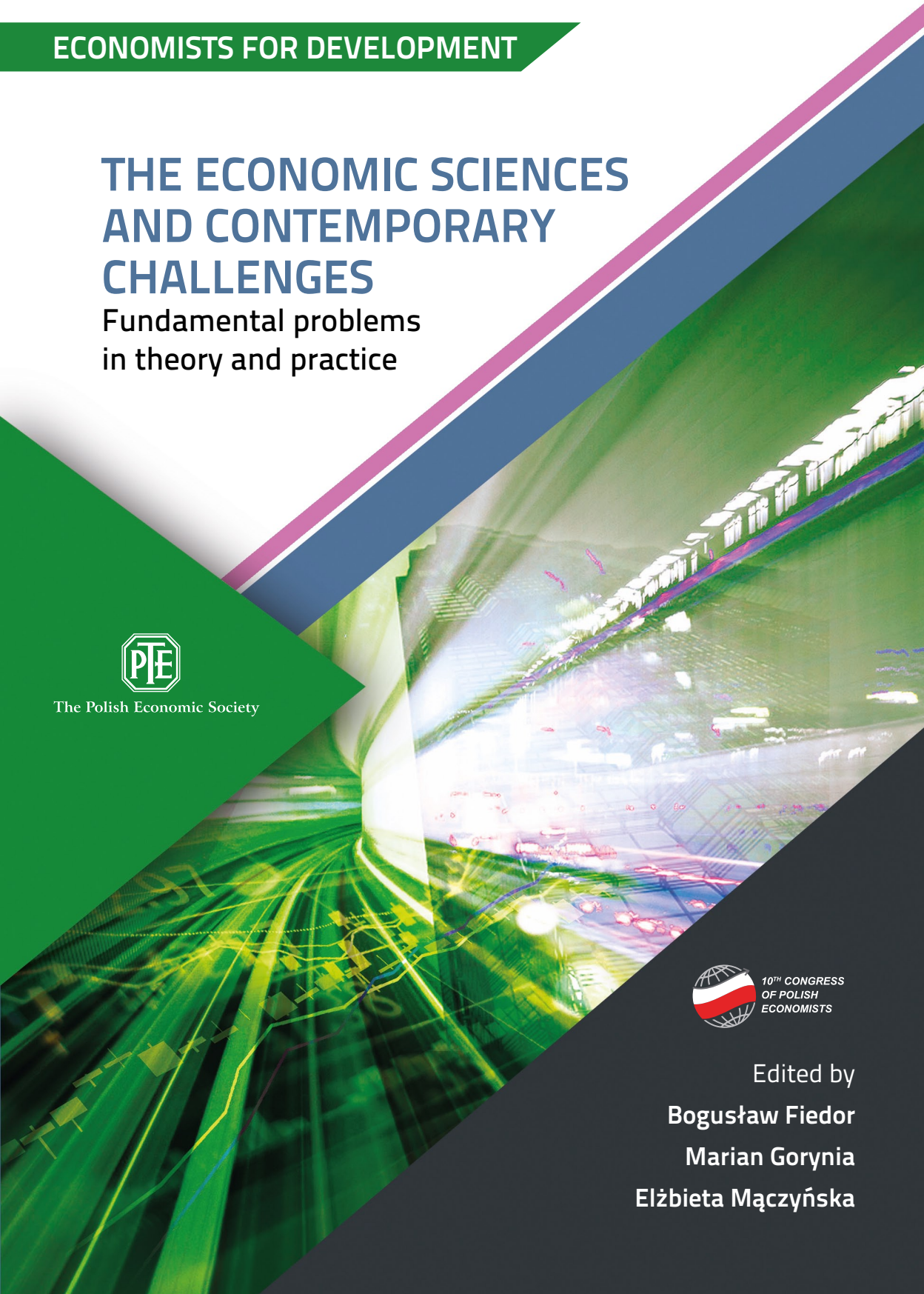
ECONOMISTS FOR DEVELOPMENT

THE ECONOMIC SCIENCES AND CONTEMPORARY CHALLENGES

Fundamental problems in theory and practice



The Polish Economic Society

10TH CONGRESS OF POLISH ECONOMISTS

Edited by
Bogusław Fiedor
Marian Gorynia
Elżbieta Mączyńska

Publishing Series
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On the strengths and weaknesses of the contemporary economic sciences

Introduction

In drafting this chapter the authors adopted an ambitious goal appropriate for the 10th Congress of Polish Economists: they strove to synthetically capture the ongoing discussion about the strengths and weaknesses of the economic sciences as a specific domain of knowledge, as well as show the main opportunities and threats faced by those sciences. The Congress appears to provide a timely occasion for this kind of reckoning and comprehensive evaluation of the observed changes and shifts in emphasis. However, in the course of writing this chapter, the original purpose had to be modified as the authors came to an understanding that it would be difficult to accomplish their design within one paper and that it would entail a very superficial treatment of the issues at hand. Therefore, the chapter has been narrowed down to the strengths and weaknesses of the economic sciences, with the question of opportunities and threats moved to a subsequent publication the authors are planning to release in the not so distant future.

In addition to an introduction and summary, the chapter consists of three sections in line with the objectives specified above. The first part strives to answer the question as to the nature of contemporary economic sciences, addressing the basic definition and classification issues. The second part presents a synthetic overview of the contemporary economic sciences, identifying and briefly analyzing their key

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strengths, while part three describes and examines their most salient weaknesses. The summary presents conclusions from the discussion and outlines directions for future research.

1. What are the contemporary economic sciences? Definitions and classifications

The contemporary economic sciences are variously interpreted in different classifications of scientific knowledge. Of particular interest here are the leading international taxonomies as well as the highly distinct Polish systems. It should be noted that disciplines may be classified with different objectives in mind, resulting in multiple ways of arranging the constituent parts of science. The OECD's field of science and technology classification consists of the natural sciences, engineering and technology, medical and health sciences, agricultural sciences, and humanities (arts are not included). Here, the economic sciences are featured within the social sciences under two disciplines: economics and business (including economics, econometrics, industrial relations, and business and management) and social and economic geography (including the social aspects of environmental sciences, cultural and economic geography, urban studies – planning and development, as well as transport planning and the social aspects of transport).

If one were to narrow down the field of observation solely to the social sciences, one should mention the well-known classification of their constituent elements developed by the Journal of Economic Literature (JEL)[1] with a view to organizing the literature within that discipline. The twenty general categories proposed by the journal are: general economics and teaching; history of economic thought, methodology and heterodox approaches; mathematical and quantitative methods; microeconomics; macroeconomics and monetary economics; international economics; financial economics; public economics; health, education, and welfare; labor and demographic economics; law and economics; industrial organization; business administration and business economics – marketing – accounting – personnel economics; economic history; economic development, innovation, technological change, and growth; economic systems; agricultural and natural resource economics – environmental and ecological economics; urban, rural, regional, real estate, and transportation economics; miscellaneous categories; and other special topics. It should also be emphasized that the above classification is not set in stone, and its modifications throughout the

[1] *JEL Classification System/EconLit Subject Descriptors*, American Economic Association, https://www.aeaweb.org/econlit/jelCodes.php?view=jel (24.09.2019).

20th century are considered to reflect the economic evolution and transformations that occurred over that time [Cherrier, 2017].

The classifications mentioned above show the diversity of interests within the various constituent components of the economic sciences and also roughly delineate the boundaries of their research areas. However, they may only serve as a point of reference for characterizing the contemporary economic sciences. The next step would be to define the identity of those sciences, as it was done by one of the present authors elsewhere [Gorynia, 2018a]. At the same time, one should draw attention to differences in how the economic sciences are understood in Poland as compared to other countries. Until September 30, 2018 the Polish classification featured eight fields of science, including the social sciences, with the economic sciences being one of their three domains. The latter were in turn subdivided into four disciplines that could be characterized as follows [Gorynia, 2018a]:

- *economics* – human behavior as a relationship between human goals and the limited resources for achieving them, taking into account alternative uses of resources;
- *management sciences* – management may be defined from the standpoint of the resource-based view in which its objective is to select and coordinate the deployment of scarce resources in such a way as to attain the organization's objectives, one of which is efficiency;
- *finance* – scarce (limited) financial resources can be allocated between various investment opportunities expected to bring benefits to their owners – here investment efficiency is of the essence;
- *commodity science* – the scientific and technological underpinnings of efficiency (depending on physical, chemical, and biological factors, etc.).

As can be seen, the common thread linking these disciplines is a broadly defined notion of efficiency. In other words, it may be posited that the economic sciences are concerned with efficiency, or the relationship of inputs to outputs, in all forms of human activity.

On October 1, 2018, Regulation 2.0 ("the Constitution for Science") redefined the social sciences as one of eight domains of science, with two out of their disciplines associated with economics: *economics and finance* and *management and quality sciences*. It may be assumed that the discipline of *economics and finance* is a product of merging the previously distinguished disciplines *economics* and *finance*, while *management and quality sciences* have arisen from a merger of *management science* and part of *commodity science.* In addition, the redefined social sciences encompass the discipline of *socioeconomic geography and spatial management*.

Other Polish classifications have been developed by the Polish Academy of Sciences (PAS) and the National Science Center (NSC). In the case of the PAS, there actually exist two separate classifications of sciences, one used by the PAS as

a corporation of researchers and one used by it as a research institution [Gorynia, 2018a]. The NSC, which provides financing for basic research in Poland, divides the overall field of science into 25 domain panels (disciplines or groups of disciplines) for the purpose of qualifying and evaluating research projects; that classification also features the economic sciences. Furthermore, it should be noted that individual economic sciences have often been informally divided into subdisciplines to enable a more detailed description of research interests and subjects [Fiedor, 2014, p. 2].

This chapter adopts a broad understanding of the economic sciences as a compromise derived from the aforementioned classifications.

2. The key strengths of the economic sciences[2]

A review of the literature reveals several key strengths of the economic sciences. First, they all share a common research core. Second, they afford multiple levels of analysis of a diverse subject matter (multiparadigmatism). Their third strength is methodological diversity. Fourth, the economic sciences have demonstrated an ability to evolve. The fifth strong point consists of what could be characterized as "positive dismalness." Sixth, they have been able to adapt to the changing realities of the economic world. Finally, they exhibit a capacity for cooperation with other disciplines, including interdisciplinarity.

In writing about the common thread of economic studies conducted from different points of view, it should be observed that the representatives of the various disciplines, subdisciplines, specializations, concepts, models, schools, theories, and research paradigms tend to focus on what makes their particular research position unique and how it is distinct from others. Much less attention has been devoted to raising awareness of the common core of the economic sciences which distinguishes them from other areas of research. As already mentioned, the core shared by all economic sciences consists of the various aspects of broadly understood efficiency of human endeavors. Most researchers in the field of economic sciences would probably agree that the fundamental research problem is the efficient use of scarce resources as well as the individual and social effects of economic activity. As previously noted, the common issue of efficiency manifests itself in different ways.

Analysis of the development of economic sciences as a research field indicates that the scopes of its various disciplines partially overlap in rather obvious ways [Gorynia et al., 2005; Rudolf, 2016; Klincewicz, 2016]. On the one hand, this may be conducive to an integration of those disciplines, while on the other hand this may also be taken to undermine the existing plurality of economic disciplines within the

[2] This part of the chapter draws on the paper by M. Gorynia [2018b] and uses its fragments.

social sciences. However, it seems that the partial overlap of disciplines is a natural phenomenon, often found in other fields. This is also one of the reasons for undertaking interdisciplinary research.

The aforementioned common core of the economic sciences by no means implies that it precludes diversity or the concurrent existence of multiple paradigms. The diversity of research interests in the economic sciences is primarily associated with the breadth of problems covered by the individual disciplines. First, it should be noted that the economic sciences as a whole mirror the complexity of real economic life. Indeed, from an ontological standpoint it may be argued that they deal with all levels of existence, which is reflected in the traditional components of micro- and macroeconomics, although this chapter cannot demonstrate the full range of levels of analysis because of space constraints. Second, for the same reason, we are unable to give due consideration to the distinguishing features of the various disciplines, not to mention subdisciplines, of the economic sciences.[3]

A discerning analysis of the literature points to a fundamental and rather uncontroversial fact that the economic disciplines reveal a characteristic that may be described as multiparadigmatism. If a paradigm is defined as a set of crucial theoretical problems associated with a subject of study, then it becomes obvious that practically all economic domains feature multiple concurrent paradigms, models, theories, directions, concepts, etc. Thus, one could argue for the existence of a market of research approaches. In this context, some authors have used the term "theory jungle" coined by H. Koontz in reference to management theory [1961]. In the case of the discipline of economics, attention to this issue has been drawn by D. Rodrik [2015b], who – paraphrasing Koontz – writes about what could be called a twofold jungle of economic models. On the one hand, the multiplicity of economic models is explained by the fact that they are applied to the various constituent components of the economy. On the other hand, economists continue to seek a single holistic model that would describe the economy in its entirety. This gives rise to the dilemma of whether economics should be based on multiple partial models which will be adapted to the situation or context at hand, or perhaps it should strive to develop a single generalized theory. According to Rodrik, the latter approach is misguided.

The aforementioned market of paradigms characteristic of the various disciplines has been evolving. Some approaches have led to socially useful results and have changed and developed, being accepted for an extended period of time, while others have been used increasingly rarely and slipped into oblivion. Paradigms may or may not prove useful in constructing models or systems of theoretical propositions [Sztompka, 1985]. They can be evaluated only *ex post*, often with the benefit of long hindsight. Those that produce useful results survive over time.

[3] This was done by M. Gorynia [2018a].

Another strength of the economic sciences lies in their ontological diversity and complexity. To understand complex systems of human economic activity, it is necessary to develop specialized research processes involving multiple levels of analysis and paradigms, and select methods of investigation appropriate to the subject matter at hand. In the case of the economic sciences, one could hardly argue that one school or approach to their philosophical and methodological foundations has dominated the field. Indeed, one should rather identify a spectrum of schools and approaches and consider the context and frequency of their application to be able to make inferences, even if indirect, about their effectiveness.

In general, while reflection on the philosophical and methodological foundations of economic research does not appear to be a particularly strong point, this issue has enjoyed increasing popularity since the beginning of the 21st century, also in Poland. Among the publications focused on this research area, of note are books by Hardt [Hardt, 2013] and Gorazda with collaborators [Gorazda et al., 2016], as well as an entire issue of the "Economics and Business Review" [Galbács, 2017a; 2017b].

Similarly to other fields of science, economic research is based on certain philosophical assumptions, with the three most important ones being that the external world is real, has a multilevel structure, and can be known [Bunge, 1967]. Another important aspect of economic investigations is the manner of formulating propositions submitted as scientific rules or laws. In this respect the economic sciences vary significantly, although there are also certain similarities between disciplines. Both idiographic and nomothetic approaches are at play. The methodological diversity of economic sciences seems to be their strong point as it often implies an interdisciplinary treatment of the problems at hand. Indeed, the ability to deploy a variety of methods to solve complex issues of both theoretical/scientific and practical/application natures should be considered an asset [cf. Fiedor, 2013].

Another strength of the economic sciences is what could be termed "positive dismalness," however paradoxical it may sound. T. Carlyle and K. Arrow's claim that economics is a "dismal science"[4] (as quoted by J. Wilkin [2009; 2016]), which is here extended to encompass all economic sciences, is associated with the fact that, true to reality, economists oftentimes remind those around them that the resources used by humans are depletable and that not everything can be accomplished right away. In response to this allegation of dismalness, it should be noted that it is precisely economists who have made people aware that their needs can only be met

[4] In his detailed analysis of the origin of the term *economics as a dismal science*, J. Persky argues that it should be linked not only to a pessimistic growth outlook represented by Malthus, but also to the mounting criticism of economic liberalism in classical economics in the mid-19th century [Persky, 1990].

to a limited degree and that their efforts must be spread over time. Indeed, thanks to economic knowledge human behavior may become more rational and realistic. In other words, an economic approach imparts a certain order and structure to the process of meeting human needs. Describing the world of human economic activity, by engaging in discourse and debate, the economic sciences help make that activity more rational and efficient, thus contributing to humanity's well-being. Consequently, upon deeper reflection, the alleged dismal nature of the economic sciences should not be taken as their weakness, but just on the contrary, as a major advantage. By their main subject of interest, which is efficiency, the economic sciences impart a rational dimension to human behavior, which entails the need to raise awareness about resource constraints and establish a hierarchy of unlimited human needs to be satisfied by means of scarce resources.

In summary, the purported or paradoxical dismalness of the economic sciences can be understood in two ways. From a functional standpoint, these sciences are beneficial and useful, as their social role is to make human behavior more rational, leading to higher levels of prosperity. In addition, economics as a dismal science brings to our attention the depletability of resources and the adverse consequences of certain technologies, which may provide a stimulus to seek new resources and technologies via R&D processes and to overcome development constraints in line with W. Nordhaus's concept of back-stop technology [Nordhaus, 1979; see also Heal, 1993]. A similar account of the economic sciences can be given from a teleological perspective. If one posits that the common goal of humans is welfare or well-being (or an improvement thereof), then, at least to some extent, we are indebted to economics for whatever progress has been made towards attaining that goal. The role of economic sciences understood in this way co-determines the civilizational development of mankind.

Another strength of the economic sciences, subsidiary to the aforementioned one, is their ability to evolve, self-correct, as well as absorb and reflect new phenomena and processes. This is evidenced by the great variety of their interests, multiparadigmatism, and methodological diversity. At the same time, the representatives of those sciences can draw conclusions from flaws in existing concepts and rectify them to better explain changes and formulate better (albeit necessarily imperfect) predictions.

The last strength of the economic sciences considered in this chapter may provide a counterargument to an allegation of economic imperialism [Fine, 2000]. That strength consists of the ability to deploy those sciences for the analysis of a variety of phenomena beyond economic activity, as well as their readiness to cooperate with other disciplines, fields, and areas of knowledge (interdisciplinarity) [Gorynia, 2016]. The interdisciplinary quality of the economic sciences may be understood in at least three ways: first, economic research may be conducted in cooperation with

disciplines in other fields of study; second, economic research may be conducted in cooperation with disciplines within the same field of study; and third, research in one subdiscipline may be conducted in cooperation with research in other subdisciplines within the same discipline.

3. The key weaknesses of the economic sciences

One could venture a general and somewhat controversial proposition that the weak (contentious or disputable) points of the economic sciences can be identified primarily by what was done in the previous section of this chapter, that is, by determining their strengths. Second, one should realize that the weaknesses of the economic sciences, as constituent components of the social sciences, must be considered both from an ontological perspective, taking into account the nature (essence) of the studied area of observed (observable) reality, as well as from methodological and cognitive perspectives, bearing in mind the interrelatedness of these two aspects, which co-determine every science. Third, the identification of the weaknesses of the economic sciences is very difficult due to their great diversity as revealed by the aforementioned JEL classification, which has come to be accepted as a canonical standard. Due to this diversity, aspects that may be considered a weakness in one economic (sub)discipline could be appreciated as a strength in another. For instance, extensive descriptiveness, an idiographic propensity, and a project/expert-based approach are often deemed methodological flaws in economics while being considered strengths in management studies due to the more descriptive and empirical (vs. nomothetic) nature of the latter.[5] These general remarks and caveats are intended to show the Reader that what follows is not an attempt at a comprehensive analysis of the weaknesses of the economic sciences (also due to space constraints), but rather a brief, subjective reflection, just as it was the case with their strengths.

As it was stated in the first part of this chapter, describing the strengths of the economic sciences, most scholars in this field of study would agree that the fundamental research problem addressed by these sciences is the efficiency of use of scarce resources in connection with the individual and social consequences of economic activity. This gives rise to the question of whether this "common core" is not treated in a one-sided manner in contemporary economics, reducing them to analysis of the abstract logic of economic choice [Robbins, 1932] or the science of rational choices (full or limited, expected or adaptive) based on broadly understood utilitarianism and the notion of *homo economicus* [Becker, 1993; Friedman, Friedman, 2009],

[5] Obviously, there are also some dissenting opinions in this respect, such as the concept of economics as a rhetorical art [McCloskey, 1994].

while disregarding or dismissing the cultural, axiological, and social determinants of economic decisions and choices made by individuals and groups [Fiedor, Ostapiuk, 2017]. Such a purely economic understanding of the common core may result in an inability of the economic sciences in general, and economics in particular, to produce a scientifically accurate description and diagnosis of the observed economic reality, and as a consequence, a failure to offer an optimum choice of tools and models for economic policy-making: public regulations as well as macroeconomic, structural, and spatial policies.

Methodological diversity, conceptualized in this chapter as multiparadigmatism, is certainly a strong point of the economic sciences. The need for such diversity is quite obvious if one takes into account the great variety of disciplines and subdisciplines in these sciences, which also implies the heterogeneity of individual research subjects and problems. If one were to limit the discussion to economics alone, the conclusion would be that economic research and education are dominated by methodological monism largely underpinned by behavioral and cognitive individualism in the neo-Classical sense, and thus by the positive approach; this is accompanied by the weakening, or even scientific delegitimization, of the normative analysis of economic phenomena and processes [Fiedor, 2019]. Moreover, alternative methodological positions that are crucial to an adequate description and prediction of economic phenomena and processes – new paradigms in the cognitive sense, such as epistemological realism (in particular characteristic of complexity economics), are still heterodox and remain outside the main stream rather than being its legitimate part (this situation is analogous to normative economics). In summary, the ontologically diverse economic reality requires greater methodological and cognitive diversity in the economic sciences in general, and in the discipline of economics in particular. What is needed is gradual development of what could be called a methodological equilibrium. By no means does it imply a rejection of epistemological individualism and economic rationality, which are characteristic of the positive approach, or a dismissal of thinking about economic problems in terms of rationality, efficiency, and optimization. Indeed the positive approach shields the economic sciences from excessive ideologization or politicization, understood here as the belief that causative political will can freely shape economic phenomena and processes.

Drawing on the thought of a leading contemporary methodologist and philosopher of science, M. Bunge [Bunge, 1967; Cordero, 2012], analysis of the strengths of the economic sciences entails the acceptance of such general philosophical assumptions as the real existence of the external world, a multilevel structure of reality, and the knowability of the world. Thus, it could be argued that economics owes its scientific power to the adoption of epistemological realism [Hardt, 2013], and this implies that in the development of economics as a science the fundamental criterion of progress and truth is the criterion of scientific realism echoing Aristotle's correspondence

definition of truth. In the case of the economic sciences this simply means an ability to explain economic phenomena and processes. In mainstream economics with its dominant positive approach [Czarny, 2010] this is implemented by the scientific testing of hypotheses (formulated as declarative sentences) with reference to empirically observable reality, which by definition excludes any axiological judgments, or, more broadly, by a normative approach to economic analysis. Leaving aside the above discussion about the need for methodological diversity and methodological equilibrium, this exclusion may also be challenged from an ontological perspective. The fundamental question is: what is the objectively existing economic world, external to the economist-researcher? Is it only a world of the so-called real economy, or perhaps a "regulatory reality" existing in the form of various institutions and formal structures, as well as a "world of values," understood here as a system of informal institutions associated with the economy? If the economic world is defined in such a broad way (a view the present authors endorse), then the criterion of scientific realism, albeit still very important, cannot serve as the only, sufficient criterion of truth and progress in the economic sciences.[6] Other possible criteria include social utility and M. Friedman's principle of predictive power.

The incorporation of all these ontological and epistemological perspectives, as well as their implications, in economic analysis may pose at least two risks to the economic sciences. First, economists representing different methodological positions may find it difficult to communicate with one another. Second, this may fuel the "temptation of economic imperialism" (imperialism of economics as a science), despite the fact that economists often have rather weak credentials (as compared to, e.g., lawyers, sociologists, social and cultural anthropologists, and ethicists) for studying the components of the external world other than the "real economy" (the regulatory world and the world of values). Obviously, these dangers may be also turned into opportunities for development, especially if one departs from economic imperialism in favor of cooperation with other social and natural sciences, as it has been the case, e.g., in behavioral, evolutionary, and environmental economics.

Summary

Conclusions: some optimistic remarks on the cognitive value and social relevance of the economic sciences

[6] The criteria of truth and progress in science (albeit the latter represents a broader problem) constitute fundamental research areas within the methodology and philosophy of economics as a science. For more on the subject see in particular: Böhm et al. [2002]; cf. also: Pogonowska [2010] and Fiedor [2010].

Since the very beginning, i.e., since their separation from other social sciences and humanities, the economic sciences in general, and the discipline of economics in particular, have followed a twofold path of development. On the one hand, their theoretical underpinnings have been increasingly based on formal and deductive modeling and a pursuit of objective rules and principles of economic activity, free from axiological judgments, much in the vein of the natural sciences. This tendency is much more pronounced in economics, and to a lesser degree in the management sciences, due to the latter being less nomothetic and more idiographic in nature. On the other hand, economists have always been receptive to the reflection and belief that the economic sciences have an applied dimension and should seek solutions to real economic problems at different scales: from microeconomic to global. And since in these endeavors it is impossible not to embrace any values, the positive and normative aspects tend to intermesh in the economic sciences, and especially in the discipline of economics.

Irrespective of the general lesson drawn from the old but still vigorous debate between the positive approach (or value-free economics, which culminated in the views of L. Robbins and G. Becker) and the normative approach claiming that it is neither possible nor necessary to pursue absolute "axiological neutrality" in economics (as noted by M. Weber, who wrote about so-called methodological value judgments as indispensable and justified in all social sciences), economists have always felt a more or less concealed inferiority complex with respect to mathematicians, physicists, and other representatives of hard science as defined in Anglo-Saxon academia. As regards mathematics, this complex was, and still is, rooted in the fact that, by the nature of the studied phenomena and processes, and especially due to the great complexity of behavioral and anthropological underpinnings of economic activity (as already indicated by A. Smith in his *Theory of Moral Sentiments*[7]), economics is unable to reach the same precision of reasoning and infallibility of conclusions even within the most methodologically sound deductive and modeling approach. It is also important to realize that any progress in this respect will inevitably come at a cost of accepting assumptions that substantially simplify or even distort the observed economic reality.[8] As regards physics, or at least classical physics, one should add that economics, and especially the management sciences, lack an ability to predict

[7] This book, crucial for the future development of both moral philosophy and economics, was published in 1759; the Polish translation was released in 1989: Smith [1989].

[8] In this context one should mention the criterion of instrumental realism or instrumental effectiveness, according to which progress in the economic sciences consists of higher (increasing) effectiveness of solving scientific problems, which by the same token implies a deprecation, if not dismissal, of the epistemological realism criterion. The instrumental effectiveness criterion was described in a comprehensive way by L. Laudan [1977, especially pp. 31–69], and given in a somewhat simplified form by P. Mongin in several of his publications [in particular see: Mongin, 2002, pp. 145–170].

future phenomena and processes with comparable precision and accuracy, which is associated with, e.g., their limited possibilities to conduct experiments, in particular on a macroeconomic scale, despite considerable advances in experimental economics. Therefore, the belief that predictive power should be the main criterion of truth and scientific progress in economics, drawing on M. Friedman's thought [1953], is dubious, if not downright false.

Given the inevitable presence of the normative (axiological) element in economics and the need to come up with solutions that are not only optimal and effective, but also socially expected, desirable, and acceptable, the aforementioned inferiority complex associated with the tendency to treat economics as a hard science akin to physics or mathematics is unjustifiable, not to say meaningless. Irrespective of the necessity to constantly explore and refine the theoretical foundations and methodological identity of economics (but without adopting a purely axiomatic paradigm, e.g., as in instrumental rationalism), it should be remembered that this discipline was and still is utilitarian (or, to be exact, socially utilitarian). This means that economics should be able to produce generalizations which not only explain changing economic reality and enable predictions of economic phenomena and processes (albeit never to the extent possible in the natural sciences), but also help shape those processes via macroeconomic, sectoral, and structural policies, public regulations, etc., to maximize benefits from the available resources for society and the economy. This should not only improve objective welfare as defined by traditional measures, but also subjective welfare understood as a sense of well-being and happiness. And this implies that axiological, cultural, and social determinants (the social context) of individual and group economic behaviors, decisions, and choices must not be ignored in pursuing effective and optimal economic solutions.