



**REVIEW BY PROFESSOR
MARIAN GORYNIA**

**RECENZJA
PROF. DR. HAB. MARIANA GORYNI**



Marian Gorynia

Poznań University of Economics and Business

REVIEW OF PROFESSOR ERIC S. MASKIN'S ACADEMIC ACHIEVEMENTS

**in the Proceedings for the Award
of an Honorary Doctorate of the Wrocław
University of Economics and Business**

The invitation to review Professor Eric S. Maskin's academic achievements as part of the proceedings for granting an honorary doctorate by the Wrocław University of Economics and Business should be primarily regarded as a distinction, but at the same time as a task requiring particular care, precision, and interpretive restraint. Writing about thinkers of this stature always involves a paradox: on the one hand, their groundbreaking scholarship is widely known and firmly established in the global economic literature; on the other, any attempt to present their work in synthetic form must necessarily simplify the breadth of the ideas that have helped shape modern economic theory. Professor Maskin undoubtedly belongs to the group of scholars whose contributions not only set new directions for the development of theoretical economics, but also influence how we think about institutions, the rules of the game in the market, and the relationship between individual and collective rationality and the broader social order.

The conferral of an honorary doctorate is an event of both scholarly and symbolic significance. From the perspective of the Wrocław University of Economics and Business—an institution with a well-established position in the Polish academic community that has consistently advanced its research ambitions and internationalization—awarding this distinction to an outstanding theoretical economist constitutes an emphatic expression of recognition for the role of fundamental theoretical research in understanding and designing modern economic institutions. In a world characterized by escalating social and political tensions, in which market complexity, the importance of information, and the pace of technological change are all increasing, the need for tools enabling the design of economic game rules becomes particularly evident and compelling.

I. Key facts from Professor Maskin's life and academic career

Eric S. Maskin is the Adams University Professor at Harvard University, where he holds joint appointments as Professor of Economics and Professor of Mathematics. He received his education at Harvard University, earning degrees in mathematics and applied mathematics, followed by a doctorate. After a period of research at the University of Cambridge, he embarked on an academic career at the Massachusetts Institute of Technology (MIT), where he advanced through the positions of Assistant Professor and Associate Professor to full Professor of Economics. In 1985, he joined the faculty of his *alma mater*; from 2000 to 2011, he served as the Albert O. Hirschman Professor of Social Science at the Institute for Advanced Study in Princeton; since 2012, he has been affiliated once again with Harvard as the Adams University Professor.

Against this academic trajectory, it is worth noting that Professor Maskin's career path is, in a sense, typical and characteristic of the highest echelon of scholars, and especially of Nobel laureates: combining activity at universities and other top-tier academic institutions, sustained intellectual productivity, and an active presence in the international academic community—through lectures, conferences, roles in scholarly societies, and editorial work.

2. Core contributions: mechanism design and implementation theory

Professor Maskin's most important scholarly achievement is the co-creation and development of mechanism design theory—an area of research that may be described as a form of “institutional engineering” within economics. The point of departure is the observation that, in the real world, economic decisions are made under conditions of asymmetric information: actors have access to different sets of information and have incentives to behave strategically. The economist's task is therefore not only to describe the operation of markets, but also to design the rules of the game (mechanisms) that—while respecting individual rationality—lead to desirable collective outcomes.

Professor Maskin has made fundamental contributions to implementation theory, that is, the study of the conditions under which a given rule of social choice can be implemented as an equilibrium outcome of a game induced by a particular mechanism. In the economic literature, the so-called “Maskin theorem on Nash implementation” has become well established, constituting one of the cornerstones of modern theoretical microeconomics. The significance of these findings lies in their ability to identify precisely when and why particular social objectives

are (or are not) attainable in a world marked by strategic behavior and incomplete information.

From the perspective of the development of economics, this represents an achievement of fundamental importance—shifting the focus from the description of market outcomes to the analysis of institutions and rules, i.e., the underlying mechanisms essential to generating those outcomes. It also paves the way for practical applications, ranging from auctions and the allocation of public resources, through regulation, to the design of decision-making procedures within organizations.

3. Game theory, repeated games, renegotiation, and contracts

A second key pillar of Professor Maskin's scholarly work is his research in game theory, and particularly in the areas of repeated games and games with incomplete information. In the literature, of special significance are his findings concerning the so-called "folk theorem" and the conditions under which cooperation can be sustained in the long run, as well as his analyses of the role of public and private information in shaping equilibrium outcomes.

An important strand of this research concerns the problem of renegotiation and the renegotiation-proofness of equilibria. These studies have direct implications for contract theory: they reveal the conditions under which agreements and strategies are stable, and when their revision can be expected. From the perspective of economic science, this constitutes a contribution of considerable significance, as real-world economic relationships—including those between employer and employee, supplier and buyer, or state and firm—are often long-term, dynamic, and susceptible to renegotiation.

4. Auctions, regulation, and public policy applications, as well as contributions to the study of democracy, social choice, and institutional order

Mechanism design has found particularly influential applications in auction theory. In this area, Professor Maskin co-developed the analysis of auctions under various assumptions regarding risk preferences and risk aversion, emphasizing the importance of auction rules for both efficiency and seller revenues (including those of the state).

From a practical perspective, this body of work has influenced, for example, the design of auctions for telecommunications spectrum and natural resources, as well as mechanisms for trading emissions permits and other climate policy instruments. Importantly, his influence is both indirect—through the provision of analytical tools employed by auction designers—and direct—through expert and advisory work for public institutions.

While Professor Maskin is above all recognized as a theoretical economist, his work also addresses issues of social choice, voting rules, and the political economy of institutions. In other words, his work carries important practical implications for shaping market, competition, and political strategies. These themes are of special relevance to the ongoing debates on the quality of democracy, polarization, and social tensions. Analyses of the rules governing collective decision-making are a natural extension of his interest in mechanism design and its implementations. Also in politics, the rules of the game determine which outcomes are attainable and stable.

5. Selected major publications and research areas

Below is a representative, but by no means exhaustive, selection of works and research areas that illustrate the breadth and significance of Professor Maskin's scholarly contributions:

- mechanism design and implementation: e.g., “Implementation and Strong Nash Equilibrium,” “Nash Equilibrium and Welfare Optimality,” and other works on the conditions for the implementation of social choice rules;
- incentives and dominant mechanisms: e.g., works co-authored with Jean-Jacques Laffont on mechanisms in dominant strategies and the differential approach to mechanism design;
- auctions: e.g., “Optimal Auctions with Risk-Averse Buyers,” “Auction Theory with Private Values” (with John Riley), as well as studies on multi-unit auctions;
- repeated games: e.g., “The Folk Theorem in Repeated Games with Discounting or with Incomplete Information” (with Drew Fudenberg), as well as work on the folk theorem under imperfect public information;
- renegotiation and equilibrium stability: e.g., “Renegotiation in Repeated Games” (with Joseph Farrell), as well as studies on renegotiation-proof equilibria;
- monopoly and regulation under asymmetric information: e.g., works (with Jean-Jacques Laffont) on monopoly behavior and regulation under private information about quality;

- institutions and the common good: contributions indicating the limitations on achieving distributive objectives under imperfect information and emphasizing the importance of the rules of the game for social outcomes.

It is worth emphasizing that Professor Maskin has published in the world's leading economic and interdisciplinary journals, and that his work ranks among the most highly regarded in theoretical economics, as reflected in its high citation counts.

6. Positions held, service to the academic community, and editorial activity

Professor Maskin's standing in the academic community is reflected in the numerous positions he has held. He served as President of the Econometric Society (2003) and as President of the Game Theory Society (2010–2012). He has also been appointed to the governing bodies of the Econometric Society (including its Council and Executive Committee), as well as to numerous positions in international scholarly associations.

Equally important is his editorial activity: he served as Editor of the *Quarterly Journal of Economics* (1984–1990), and has held numerous editorial and advisory positions at other leading journals, including the *Review of Economic Studies*, *Games and Economic Behavior*, *Economics Letters*, *Social Choice and Welfare*, *International Journal of Game Theory*, *Review of Economic Design*, and *Economic Theory*. This activity has promoted high scholarly standards and guided the development of numerous sub-fields within economics.

7. Honors, memberships, and honorary doctorates

The universal recognition of Professor Eric S. Maskin's scholarly achievements is reflected in his numerous awards, honors, and memberships. In addition to the Nobel Prize (2007), he has received, among others, a J. S. Guggenheim Fellowship, a Sloan Research Fellowship, the Jean-Jacques Laffont Prize, and the Kempe Award in Environmental Economics (shared with P. Dasgupta), as well as several teaching awards from Harvard University. He is a member of the National Academy of Sciences and the American Academy of Arts and Sciences, and a fellow of the Econometric Society, the British Academy, the European Economic Association, and the Game Theory Society.

Professor Maskin has also received numerous honorary doctorates from universities across different continents, including the University of Cambridge (Doctor of Science), Georgetown University (D.H.L.), the Université libre de Bruxelles, Corvinus University of Budapest, the Carlos III University of Madrid, and the University of Alicante. This attests to the exceptionally broad and enduring impact of his work on the global community of economists.

8. The significance of Professor Maskin's scholarly contributions for Poland and the region, and the symbolic importance of the distinction conferred by the Wrocław University of Economics and Business

From a Polish perspective, it is of particular significance that the tools developed within mechanism design theory are useful in the practical modernization of economic institutions, including the design of auctions, regulation, and procedures for the allocation of public resources.

In countries undergoing systemic transformation, the quality of institutions is of fundamental importance, and reflection on incentives, information, and the stability of the rules of the game constitutes one of the key conditions for sustainable development. This is, among other reasons, why Professor Maskin's work has attracted considerable interest in Poland, and especially within the community of Polish economists.

The conferral of an honorary doctorate by the Wrocław University of Economics and Business upon Professor Maskin undoubtedly reinforces, in symbolic terms, the standing of theoretical research in economics and underscores the importance of institutional analysis in both scholarly research and teaching. It also constitutes a clear signal of the internationalization of the Polish academic community and its openness to the highest global standards.

9. Final conclusions

The foregoing analysis unequivocally demonstrates that the body of Professor Eric S. Maskin's scholarly achievements makes him one of the most distinguished theoretical economists of the late twentieth and early twenty-first centuries. It is worth emphasizing that his work has contributed to shaping the foundations of mechanism design theory, implementation theory, and modern game theory, while at the same time providing tools that have influenced the practice of public policy and the design of institutions. It is noteworthy that the high theoretical value of Professor Maskin's contributions is accompanied by significant implications for economic, social, and political life. Thus, in the case of Professor Eric Maskin, the highest caliber of scholarly achievement converges with international recognition, extensive service to the academic community, and a profound influence on how institutions

are understood. This forms a compelling basis for the conclusion that his nomination for an honorary doctorate of the Wrocław University of Economics and Business is fully justified and deserving of full endorsement.

Marian Gorynia

Uniwersytet Ekonomiczny w Poznaniu

RECENZJA DOROBKU NAUKOWEGO PROFESORA ERICA S. MASKINA

w postępowaniu o nadanie tytułu
doktora *honoris causa* Uniwersytetu
Ekonomicznego we Wrocławiu

Zaproszenie do przygotowania recenzji dorobku naukowego Profesora Erica S. Maskina w postępowaniu o nadanie Mu tytułu doktora *honoris causa* Uniwersytetu Ekonomicznego we Wrocławiu należy traktować przede wszystkim jako wyróżnienie, ale zarazem jako zadanie wymagające szczególnej uwagi i precyzji oraz powściągliwości interpretacyjnej. Pisanie o myślicielach tej rangi zawsze wiąże się z pewnym paradoksem: z jednej strony ich osiągnięcia są powszechnie znane i ugruntowane w światowej literaturze ekonomicznej, z drugiej zaś – próba syntetycznego ujęcia dorobku musi siłą rzeczy upraszczać bogactwo idei, które współtworzą współczesną teorię ekonomii. Profesor Maskin należy ponad wszelką wątpliwość do grona tych badaczy, których prace nie tylko wyznaczają nowe kierunki rozwoju ekonomii teoretycznej, lecz także wpływają na sposób myślenia o instytucjach, regułach gry rynkowej oraz relacjach między racjonalnością indywidualną a zbiorową i ładem społecznym.

Nadanie godności doktora *honoris causa* jest wydarzeniem o znaczeniu zarówno naukowym, jak i symbolicznym. Z perspektywy Uniwersytetu Ekonomicznego we Wrocławiu – uczelni o ugruntowanej pozycji w polskim środowisku akademickim, konsekwentnie rozwijającej ambicje badawcze i umiędzynarodowienie – wyróżnienie wybitnego ekonomisty teoretyka stanowi wyraz uznania dla roli podstawowych badań teoretycznych w rozumieniu i projektowaniu nowoczesnych instytucji gospodarczych. W świecie, w którym złożoność rynków, znaczenie informacji oraz dynamika zmian technologicznych rosną, jednocześnie zaś wzrastają napięcia społeczne i polityczne, potrzeba narzędzi pozwalających projektować reguły gry ekonomicznej staje się szczególnie widoczna i oczywista.

I. Najważniejsze fakty z życiorysu i przebiegu kariery naukowej

Eric S. Maskin jest profesorem na Uniwersytecie Harvarda (Adams University Professor), gdzie pełni jednocześnie funkcje profesora ekonomii oraz profesora matematyki. Wykształcenie również zdobył na tej uczelni, uzyskując stopnie naukowe w dziedzinie matematyki i matematyki stosowanej, a następnie robiąc tam doktorat. Po okresie badań, które prowadził w Cambridge University, rozpoczął karierę akademicką w Massachusetts Institute of Technology (MIT), gdzie przeszedł kolejne szczeble kariery (Assistant Professor, Associate Professor, Professor of Economics). W 1985 roku związał się ze swoją *alma mater* – Uniwersytetem Harvarda. W latach 2000-2011 pełnił funkcję Albert O. Hirschman Professor of Social Science w Institute for Advanced Study w Princeton. Od 2012 roku ponownie jest związany z Harvardem jako Adams University Professor.

Śledząc tę ścieżkę zawodową, warto zauważyć, że przebieg kariery Profesora Maskina jest w pewnym sensie typowy i charakterystyczny dla

światowej elity uczonych, w szczególności noblistów: łączy aktywność w uniwersytetach i instytucjach o najwyższym prestiżu naukowym, ciągłość twórczą oraz intensywną obecność w międzynarodowym środowisku akademickim – poprzez wykłady, konferencje, pełnione funkcje w towarzystwach naukowych oraz pracę redakcyjną.

2. Rdzeń dorobku: projektowanie mechanizmów i teoria implementacji

Najważniejszym osiągnięciem naukowym Profesora Maskina jest współtworzenie i rozwój teorii projektowania mechanizmów (*mechanism design*) – obszaru badań, który można określić jako „inżynierię instytucjonalną” w ekonomii. Punkt wyjścia stanowi tu obserwacja, że w realnym świecie decyzje gospodarcze zapadają w warunkach asymetrii informacji: uczestnicy rynków dysponują różnymi informacjami i odbierają bodźce skłaniające do strategicznego zachowania. Zadaniem ekonomisty jest zatem nie tylko opis działania rynków, lecz także projektowanie reguł gry (mechanizmów), które – przy zachowaniu racjonalności jednostek – prowadzą do pożądaných rezultatów zbiorowych.

Profesor Maskin wniósł fundamentalny wkład w teorię implementacji, tj. badania nad warunkami, w których określona reguła wyboru społecznego może zostać „zaimplementowana” jako wynik równowagi gry wywołanej przez przyjęty mechanizm. W literaturze ekonomicznej utrwaliło się pojęcie tzw. twierdzenia Maskina dotyczącego implementacji w równowadze Nasha, stanowiącego jeden z filarów współczesnej mikroekonomii teoretycznej. Znaczenie uzyskanych rezultatów badań polega na tym, że pozwalają one precyzyjnie wskazać, kiedy i dlaczego określone cele społeczne są (lub nie są) osiągalne w świecie strategicznych zachowań i niepełnej informacji.

Z perspektywy rozwoju ekonomii jest to osiągnięcie o randze fundamentalnej – przesunęło ono punkt ciężkości z opisu rynkowych „rezultatów” na analizę instytucji i reguł, czyli mechanizmów, które te rezultaty współtworzą. Otwiera też pole do zastosowań praktycznych – od aukcji i alokacji zasobów publicznych, przez regulację po projektowanie procedur decyzyjnych w organizacjach.

3. Teoria gier, gry powtarzane, renegocjacja, kontrakty

Drugim kluczowym filarem dorobku Profesora Maskina są prace z zakresu teorii gier, zwłaszcza gier powtarzanych i gier z niepełną informacją. W tej literaturze szczególne znaczenie mają wyniki dotyczące tzw. *folk theorem* oraz warunków podtrzymywania współpracy w długim horyzoncie czasowym, a także analiza roli informacji publicznej i prywatnej w kształtowaniu równowagi.

Ważnym wątkiem jest problem renegocjacji i renegocjacyjnej odporności równowag. Badania te mają bezpośrednie implikacje dla ekonomii kontraktów: pokazują, w jakich warunkach umowy i strategie są trwałe, a kiedy można oczekiwać ich rewizji. Z punktu widzenia nauk ekonomicznych jest to wkład o dużym znaczeniu, ponieważ rzeczywiste relacje gospodarcze – w tym relacje pracownik–pracodawca, dostawca–odbiorca czy państwo–przedsiębiorstwo – mają często charakter długookresowy, dynamiczny i podatny na renegocjację.