

Complexity and the Economy

[W. BRIAN ARTHUR](#) [Authors Info & Affiliations](#)

SCIENCE • 2 Apr 1999 • Vol 284, Issue 5411 • pp. 107-109 • DOI: 10.1126/science.284.5411.107



CHECK ACCESS

Abstract

After two centuries of studying equilibria—static patterns that call for no further behavioral adjustments—economists are beginning to study the general emergence of structures and the unfolding of patterns in the economy. When viewed in out-of-equilibrium formation, economic patterns sometimes simplify into the simple static equilibria of standard economics. More often they are ever changing, showing perpetually novel behavior and emergent phenomena. Complexity portrays the economy not as deterministic, predictable, and mechanistic, but as process dependent, organic, and always evolving.

Access the full article

View all access options to continue reading this article.

CHECK ACCESS

ALREADY A SUBSCRIBER OR AAAS MEMBER? SIGN IN AS AN [INDIVIDUAL](#) OR VIA YOUR [INSTITUTION](#)

We and our 43 IAB TCF partners store and access information on your device for the following purposes: store and/or access information on a device, advertising and content measurement, audience research, and services development, personalised advertising, and personalised content. 

Personal data may be processed to do the following: use precise geolocation data and actively scan device characteristics for identification.

Our third party IAB TCF partners may store and access information on your device such as IP address and device characteristics. Our IAB TCF Partners may process this personal data on the basis of legitimate interest, or with your consent. You may change or withdraw your preferences at any time by clicking on the cookie icon or link; however, as a consequence, you may not see relevant ads or personalized content. You may change your settings at any time or accept the default settings. You may close this banner to continue with only essential cookies. [Privacy Policy](#)

[Storage Preferences](#)[Third Parties](#) STORAGE TARGETED ADVERTISING PERSONALIZATION ANALYTICS[SAVE](#)[ACCEPT ALL](#)[REJECT NON-ESSENTIAL](#)

eLetters is a forum for ongoing peer review. eLetters are not edited, proofread, or indexed, but they are screened. eLetters should provide substantive and scholarly commentary on the article. Neither embedded figures nor equations with special characters can be submitted, and we discourage the use of figures and equations within eLetters in general. If a figure or equation is essential, please include within the text of the eLetter a link to the figure, equation, or full text with special characters at a public repository with versioning, such as Zenodo. Please read our [Terms of Service](#) before submitting an eLetter.

[LOG IN TO SUBMIT A RESPONSE](#)

No eLetters have been published for this article yet.

ADVERTISEMENT

CURRENT ISSUE



[State-independent ionic conductivity](#)

BY J. BARCLAY, J. M. WILLIAMSON, ET AL.

[Risks of per- and polyfluoroalkyl substance exposure through marine fish consumption](#)

BY WENHUI QIU, GE YANG, ET AL.

[AQP5: A functional gastric cancer stem cell marker in mouse and human tumors](#)

BY HUI YI GRACE LIM, SWATHI YADA, ET AL.

[Sign up for ScienceAdviser](#)

Get Science's award-winning newsletter with the latest news, commentary, and research, free to your inbox daily.

[SUBSCRIBE >](#)

[TABLE OF CONTENTS >](#)

ADVERTISEMENT

LATEST NEWS

SCIENCEINSIDER | 30 DEC 2025

[After legal deal, NIH to review grant proposals frozen, denied, or withdrawn because of Trump directives](#)

SCIENCEINSIDER | 30 DEC 2025

[Is 'open science' delivering benefits? Major study finds proof is sparse](#)

NEWS | 30 DEC 2025

[Science's favorite news visuals of 2025](#)

SCIENCEINSIDER | 29 DEC 2025

[Firing of neuroscience institute chief adds to NIH's leadership vacuum](#)

SCIENCEHOTS | 29 DEC 2025

[Watch tiny plankton 'surf' ocean currents](#)

NEWS | 29 DEC 2025

[Chemicals in million-year-old fossils reveal animals' lives in detail](#)

We and our 43 IAB TCF partners store and access information on your device for the following purposes: store and/or access information on a device, advertising and content measurement, audience research, and services development, personalised advertising, and personalised content.



Personal data may be processed to do the following: use precise geolocation data and actively scan device characteristics for identification.

Our third party IAB TCF partners may store and access information on your device such as IP address and device characteristics. Our IAB TCF Partners may process this personal data on the basis of legitimate interest, or with your consent. You may change or withdraw your preferences at any time by clicking on the cookie icon or link; however, as a consequence, you may not see relevant ads or personalized content. You may change your settings at any time or accept the default settings. You may close this banner to continue with only essential cookies. [Privacy Policy](#).

[Storage Preferences](#)

[Third Parties](#)

STORAGE

TARGETED ADVERTISING

PERSONALIZATION

ANALYTICS

SAVE

ACCEPT ALL

REJECT NON-ESSENTIAL

FOLLOW US

GET OUR NEWSLETTER

NEWS

[All News](#)
[ScienceInsider](#)
[News Features](#)
[Subscribe to News from Science](#)
[News from Science FAQ](#)
[About News from Science](#)
[Donate to News](#)

LIBRARIANS

[Manage Your Institutional Subscription](#)
[Library Admin Portal](#)
[Request a Quote](#)
[Librarian FAQs](#)

CAREERS

[Careers Articles](#)
[Find Jobs](#)
[Employer Hubs](#)

COMMENTARY

[Opinion](#)
[Analysis](#)
[Blogs](#)

JOURNALS

[Science](#)
[Science Advances](#)
[Science Immunology](#)
[Science Robotics](#)
[Science Signaling](#)
[Science Translational Medicine](#)
[Science Partner Journals](#)

AUTHORS & REVIEWERS

[Information for Authors](#)
[Information for Reviewers](#)
[About Us](#)
[FAQs](#)
[Access and Subscriptions](#)
[Order a Single Issue](#)
[Reprints and Permissions](#)
[TOC Alerts and RSS Feeds](#)
[Contact Us](#)

RELATED SITES

[AAAS.org](#)
[AAAS Communities](#)
[EurekAlert!](#)
[Science in the Classroom](#)

ABOUT US

[Leadership](#)
[Work at AAAS](#)
[Prizes and Awards](#)

HELP

© 2025 American Association for the Advancement of Science. All rights reserved. AAAS is a partner of HINARI, AGORA, OARE, CHORUS, CLOCKSS, CrossRef and COUNTER. Science ISSN 0036-8075.

[Terms of Service](#) | [Privacy Policy](#) | [Cookie Preferences](#) | [Accessibility](#)

We and our 43 IAB TCF partners store and access information on your device for the following purposes: store and/or access information on a device, advertising and content measurement, audience research, and services development, personalised advertising, and personalised content.

Personal data may be processed to do the following: use precise geolocation data and actively scan device characteristics for identification.

Our third party IAB TCF partners may store and access information on your device such as IP address and device characteristics. Our IAB TCF Partners may process this personal data on the basis of legitimate interest, or with your consent. You may change or withdraw your preferences at any time by clicking on the cookie icon or link; however, as a consequence, you may not see relevant ads or personalized content. You may change your settings at any time or accept the default settings. You may close this banner to continue with only essential cookies. [Privacy Policy](#)

[Storage Preferences](#)

[Third Parties](#)

[STORAGE](#)

[TARGETED ADVERTISING](#)

[PERSONALIZATION](#)

[ANALYTICS](#)

SAVE

ACCEPT ALL

REJECT NON-ESSENTIAL