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A Current Perspective On The Relationship Between Economics And Physics

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Аннотация:
Ушбу мақолада халқ таълимда узлуксиз методик таъминлашнинг ташкил этишнинг педагогик шарт-шароитлари, ҳақида таълимда инна инновацион технологияларнинг ўрни ва аҳамияти баён этилган. Шунингдек, билимларнинг ўқувчилар томонидан самарали ўзлаштирилишига хизмат қилиши асосланган

Калит сўзлар: Econophysics , Economy , Finance Economics , Physics

Economics of Adam Smith the famous " Peoples". wealth " (1776) . with his own modern the basics from what he put after two half century during many changes and developments from the beginning he forgave These paradigm shifts , debates and compromises during was a social science of the economy with other disciplines Some of the relationships have changed in periods it is different with social studies more active in touch was , that's it with together , so there were times . his physics sciences with mutually connection high was Economy and physics of science mutually the effect , perhaps , of the economy to science rotation or development in the process the most decisive is one of the factors .

From the classics pulling to the neoclassics has been development during economists physics of sciences conceptual and mathematical developments and their natural phenomena describe and prophecy in doing great of success inspired ones . Adam Smith is undoubtedly a classic of physics the founder Newton's creativity effect showed . Newton's action laws to physics take came elegance that's it period scientists of other sciences also have their own fields for imitation was what he did . The economy scientificization in the process of physics physics in the sciences position imitation to do account for this purpose from mathematics to use passes , Classic economy Newton physics and Euclid geometry with , Neo Classic economy thermodynamics and differential account with , Einstein physics . and Riemann geometry and Keynes economy , quant physics and topology. General balance of the economy attitude is also today of the day mutually effect to understand for important important have

This mutually of influence direction basically from physics to the economy was Of this One of the reasons is that it is physics theoretical approaches in other subjects the most advanced count methods have However , physics learned and to the economy contribution added important there are also names . Alphonse Quetelet (1796-1874), Leon Walras (1834-1910), Wilfredo Pareto (1848-1923) and Robert Gibrat (1904-1980) in physics or engineering in the field education to the economy contribution added

Natural science and social sciences learning methods , events seeing exit and their assumptions check in the middle very a lot differences there is . Experience and repetition for to

appropriate science problems despite social sciences mainly by nature variable by people who are and people who are created social structures with is engaged in . This in the article from social sciences to natural sciences, physics and economy sciences between mutually of relationships in the past and present status seeing out , relatively new concept to be econophysics concept and this concept around arguments is brought .

Economy and physics

Economy basics created century as XVIII century acceptance if done , this is two of science mutually connections that's it in the century to say started can Adam Smith's Demand and offer in the laws Newton's action laws , especially every action reaction harvest to do about the third the law footprints to see can First economists economic the system as a mechanical system to see and own analysis the same physicists or engineers such as to justify action they did Saying maybe the only one difference that is , experiments in science theories basis organize does , in the economy while observations the same so task performs At the end of the 19th century Francis Edgeworth and Alfred Marshall physicists some ideas inspired , like Clerk Maxwell and Ludwig Boltzmann for gases offer as did the economy balance came to a state .

It's mutual influence itself at the beginning of the 20th century manifestation did Paris fund in the stock exchange valuable pieces of paper and bonds movement modeling according to attempts During the mathematician Louis Bachelor the mathematical theory of diffusion work came out and a lot soon Albert Einstein the same that's it diffusion to Eq based on Brown action theory before pushed . Quantum to physics added contribution denial reached which cannot be This theory of Einstein is especially financial in the economy the stock market of prices in change applied main is one of the theories .

new of physics criticisms and effect

Apparently as the whole historical process during economists usually of physics natural in the sciences scientific to the power imitation those who did , but physics in the 20th century from the beginning forgave changes to observe those who do n't want Saying probably from the beginning of the 20th century in physics , another paradigm changes in natural sciences face gave Einstein and of others work , relativity theory and quantum of physics birth many the news brought Physics and beyond chemistry and biology such as established in the natural sciences theories doubt under received Economy previous to experiences from this change in relation enough effect did not show Theoretical in terms of consistent and elegant mathematical models on which they are based limited assumptions because of the facts explanation for enough it's not was Natural sciences are out of balance deviation cases attention directed even though economists still conduct equilibrium analysis continue they made it, perfectly knowledgeable and reasonable and impartial homo economicus happen will be and dynamic behavior external is considered Of these important one example is common balance is a paradigm .

Neoclassical action One of its representatives is Leon Walras common balance paradigm to 19th century physics at almost every point parallel Walras own at work very a lot criticism done , he own theory mechanics wrong made up or mathematics wrong understood that claim did Mirovsky's neoclassical economy in physics developments and main elements take them to the economy input and therefore for blind to the points have the fact that about findings quantum mechanics with together neo-classical to the economy against done important is one of the criticisms . Although Mirovsky's theses criticism done , his in the findings some math errors determined even though Mirovsky in economics serious intellectual to form achieved That's it in place of physics quantum mechanics with

dimensions change with ideas , wishes or thoughts happen happening to events effect do it can't sure let's say it 's done error it won't be .

Uncertainty and complexity concepts important importance occupation eat started In analyzing these concepts physicists and of economists The approaches are drastically different does Today's economic in the approach uncertainty attention not available and this gap risk and pending benefit concepts with to be filled action will be done . In physics quantum revolution Newton classic concept take deterministic approach finished In 1927 of the particle location and speed at the same time identify said that it won't happen the idea before drove Heisenberg to this example be takes Physics uncertainty , especially at the micro level own into received although in the economy accuracy search continue did

In economics new approach

Econophysics field in the economy , especially in finance some the issues are mainly statistical physics using to explain attempt as appear has been is a field . In this field some schools organize appeared since has been although - among them the most The Boston School is undoubtedly the most influential . Of course , this concept in 1995 in Calcutta being past at the conference present Physicist Yevgeny of Stanley this of the university physics in the department the fact that with depend Although it is still a new field of science even though statistics physics , especially his financial events to explain directed actions from day to day of physicists attention more and more more attraction is doing Well , physicists social sciences to learn what encourages ? Physics concrete and to himself is typical and his own prophecy to do strength known universal of truths takes However , this is the case in social sciences truths is there ? question is born Humanity complicated the world considering that explaining giving any information is there This topic according to pioneer article Majorana by written This in the article physics and social in the sciences statistics between dependence is installed and to similarities attention is directed . At first from each other very difference who does important in two subjects similarities presence was recorded . Most important one of the similarities is that both disciplines are universal to something different looks from the point of view .

Rohner why physics in the social sciences the word to say need about to criticism physics experimental methodology present reach through social to the sciences contribution adds that answer will give . Physicists , especially statistics physicists data with work experience denial reached it won't be . In the economy , especially in finance wide scope data existence considering these data in order puter different distribution features and strength laws existence and their surface coming possible has been consequences of economic physics main interest fields to the line input can Computers and count powers increase to information based on methods work to exit the effect is also very important

Current at the time computers are large information again work and stochastic processes simulation to do ability have that it was because of , how much complicated no matter what , to simplicity of aspiration the need no . Economical systems with each other mutually effect doer and in large quantities digital information own into received complicated are systems (their most of them never when not checked). This of information statistics features learning long time during of scientists attention pulled Financial time of rows distribution differences first mathematician Mandelbrot by open given Precious papers market of the index incomes fit a normal distribution (Gaussian). not coming , however oily tail behavior to show observed . However , different different in studies variability cluster and leverage effects stylized as effects were also observed . Economical empirically observed theory non-gaussian distributions explaining give didn't get it because of econophysics approach the first to the seat came out. Financial time of rows distribution properties

still of economic physics main is one of the topics remains of Richards in the opinion of econofizika to literature added One of the biggest contributions is financial time fractal properties of series have that show was

Disintegration points

In the last 15 years econophysics and economy between connections not strengthened , on the contrary , between them difference expanded . Methodical of consensus the absence of this gap increase with depends to be can Main in economics economic a priori models of phenomena with work through is modeled . This of approach basis of information importance attention not taken . Other on the other hand , econophysics from the data starts and from the basic model approach goes away That's it in terms of which they often are main of economists assumptions careless they leave In fact , these assumptions are especially finance such as complicated in the fields is not done , which is of models weak explanation to the power take will come . Economical assumptions real situations to simplify directed . But of physicists such purpose no . They are through the image real situations to understand action they do of Shinkkus said different axioms with sterilized and simplification for criticism done economy in this sense not even a science . It is also basic the economy his own some views with refuse which econophysics new approach not but that it is a new science emphasizes .

Summary

Economy since the 18th century with many disciplines in cooperation developed and present shape took It is cooperation in the subjects that do of physics place from others obvious difference does 18th century physics and action laws based on economics quantum in the 20th century of physics rise with changed . This is to change physicists along with Economists also contribute added . In particular , neoclassical to the economy about criticisms economy of science great contribution to development added . This is development with in economics differently views appear it has been . Of them the most the main thing of the economy main principles aside did not come out without quantum from physics which uses financial economy and that's it similar methods which uses , but all the basics experiences through received knowledge with Create need said the idea before pushing is econophysics . This in the article economy and of economic physics economic to events approach methods and they are from each other which aspects with difference to do discussion will be done . Apparently , the main difference that is , economists to information based on approach based on , economists while to certain assumptions based on conclusion to issue action they do That's it because of in literature econophysics another science views appear be started

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