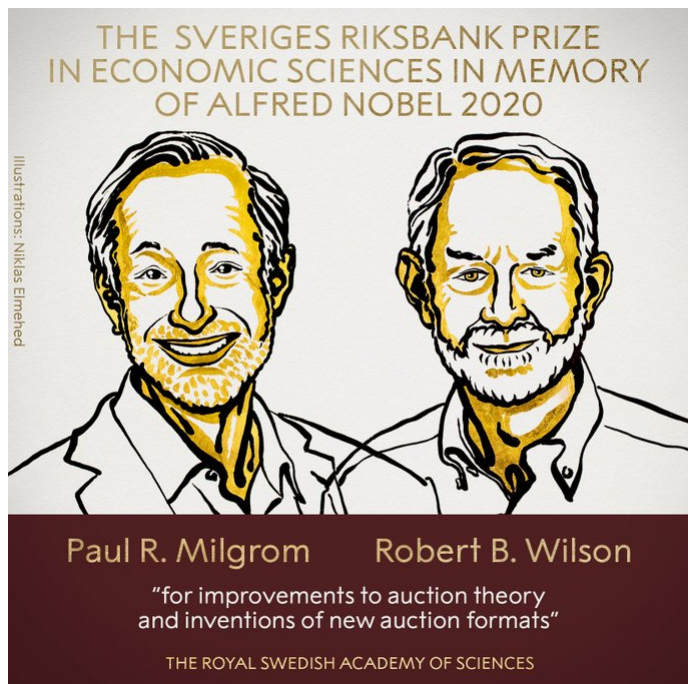


R&D Outsourcing

The main lot went to the auctioneers



Nobel Prize Laureates in Economics named US citizens Paul Milgrom and Robert Wilson were awarded the Nobel Prize in Economics. The merit of economists is that they helped to invent completely new auction formats that have become widespread in practice.

Robert Wilson (Photo: www.stanford.edu)

The 2020 Nobel Prize in Economics was awarded to Americans Paul Milgrom and Robert Wilson for "improving auction theory and inventing new auction formats," said Goran Hansson, secretary general of the Royal Swedish Academy of Sciences.

Milgrom was born in 1948, received his PhD from Stanford University and is now a professor of arts and sciences in the Department of Economics at Stanford. Born 1937, Wilson is a Harvard University graduate and is an Emeritus Professor of Management at Stanford Business School.

What the prize was awarded for

Auctions are the oldest form of property sale, which is still actively used today. Economists are interested in such examples of modern auctions as the bidding of radio frequencies for telecommunications operators, which has been conducted by the US Federal Communications Commission since the 1990s; auctions for the placement of government bonds, held everywhere; tenders of the European Union for the sale of quotas for greenhouse gas emissions.

Any auction is characterized by three factors: the format (rules) of the auction, the characteristics of the object being sold, and information uncertainty (each participant has only a probabilistic distribution of the object's value).

Robert Wilson, in a series of classics from the 1960s and 1970s, described the optimal bid strategy for a first price auction (a closed auction where the item goes to the highest bidder). He showed that bidders bid a lower price than their best estimate of the property's value to avoid the "winner's curse," a situation in which the winning bidder overestimates the property's value and suffers losses.

Milgrom published several scientific papers around 1980 analyzing how different auction formats affect the winner's curse problem. In an English auction, the organizer starts with a low price and increases it step by step, while in a Dutch auction, on the contrary, starts with a high price and goes down until someone agrees to buy the object. Milgrom proved that the problem of the "winner's curse" is more acute for the Dutch auction, so the final price in this format is lower than in the English auction.

Milgrom and Wilson's scientific research is not only helping governments and regulators sell properties at higher prices, and bidders buying at lower prices. Their work contributes to the effectiveness of auctions when the object goes to the participant who is best able to cope with the management of the acquired object, noted in the materials of the Nobel Committee (.pdf).

Inventors of auctions

The award to Milgrom and Wilson "is absolutely deserved and justified, they made a huge contribution not only to the theory of auctions, but also to its practical application," Rector of the Russian School of Economics (NES) Ruben Enikolopov told RBC. "If you ask any economist to show an example of a successful application of the theory that would be understandable to an ordinary person, it is the studies of the Milgrom and Wilson auctions and how they helped the governments of many countries to make money, for example, from the sale of radio frequencies, will be one of the first such examples." said the economist.

Auction theory uses advances in more fundamental areas of economics: game theory and mechanism design, for which several prizes have already been awarded, said Daniil Shestakov, senior lecturer at the Faculty of Economics at Moscow State University. All of these areas study how rational people will behave in "games" - situations in which everyone's payoff depends on the actions of everyone else, and how to organize such "games" so that their result (in game theory, it is called equilibrium) has the desired properties. ... Milgrom was a student of Wilson. Wilson's other two students, Alvin Roth and Bengt Holmstrom, have already become Nobel laureates themselves.

"The auction is also a game: in it rational players try to get a lot, but do not want to overpay for it. Whether I win a lot or not depends not only on my bet, but also on everyone else's bet. The organizer of the auction wants the lot to go to the one who is willing to pay the most for it. Many questions arise. What is better - when the auctioneer raises the price and the lot goes to the last person who is willing to pay, or when the price drops from a certain maximum and the lot goes to the first person who says "buy". Or maybe it's better to send bids in closed envelopes? Milgrom and Wilson described the theoretical properties of many types of auctions and the optimal strategies that their participants should adhere to, "Shestakov explained.

The main theoretical achievement of eco

the theory of total / linked price auctions, or, informally speaking, sales in which the players would like to know each other's rates, notes Pavel Andreyanov, Associate Professor of the Department of Theoretical Economics at the Higher School of Economics, PhD: "This theory determined the winner in a seemingly insoluble dispute between English (with a rising price) and Dutch (with a falling price) versions of the open auction. The Dutch auction lost the dispute due to the fact that players drop out of it before they can take advantage of its openness. "

An equally important discovery in the theory of total price auctions is that the winner often overestimates the value of the auction item (winner's curse). In practice, this leads either to rejection of the deal, painful for all market participants, or to lower profits due to the uncertainty of the players in their estimates. The solution to this problem was a very simple advice - publish as much

information as possible about the subject of the auction in order to reduce uncertainty, Andreyanov said.

In recent years, in an unstable market, Dutch auctions (to lower prices) have become the best way to sell, Andrei Stepanenko, general director of the Russian Auction House (RAD), created by order of the government, told RBC: "In a situation where it is unclear at what cost to put up property for sale when the owners insist on the pre-crisis price, and the buyers are counting on a discount, taking into account the current market conditions, trading for a fall can bring their expectations to one point ". The cut-off price for such an auction can be from 50% or more. The potential opportunity to buy an object at such a discount attracts potential buyers and creates excitement, and where there is excitement, there is competition and price growth, Stepanenko notes. "The auctions are structured in such a way that as soon as at any stage of price reduction there is a bidder who is ready to buy an object, the auctions are reversed. If there are several applicants, then they begin to compete with each other, increasing the price. As a result, property, as a rule, is sold at market value," explained the Director General of the AHRF.

Auctions in Russia

The theory of Milgrom and Wilson, of course, can be applied in Russia, but the mechanisms that the laureates invented must be adapted to each specific situation, Yenikolopov noted. "For example, Milgrom is a co-founder of several startups that advise on how best to hold a particular auction, which design is better to choose," says the rector of NES.

Now almost all government purchases are conducted through an auction. "Moreover, Russia is one of the world leaders in organizing state auctions," Andreyanov notes. The zakupki.gov.ru platform has been operating since 2014, the Federal Antimonopoly Service (FAS) monitors the implementation of the auction rules.

There are studies that study corruption in auctions, Yenikolopov added. "Corruption in public procurement is present in all countries of the world to one degree or another, and everyone is trying to fight it," he said. Bidders should consider corruption risks when designing auctions. "For example, if you understand that you have a risk of collusion between the participants, you will choose a different auction format that reduces the risk of corruption. You will most likely receive less money from the auction, but the likelihood of a corruption scheme will be lower," said the economist.

Milgrom invented several types of auction mechanisms, which were used by the US Federal Communications Commission to sell the radio frequency spectrum, the Bank of England to buy bonds on the secondary market, etc. He is one of the founders of Auctionomics, an auction consulting business. Milgrom's clients include Google and Yahoo, and in 2006, thanks to Milgrom's strategy at an RF auction, Comcast saved \$ 1.2 billion.

In Russia, auctions are used for the sale of state property, licenses for subsoil use, frequencies for mobile networks, etc. The Ministry of Finance sells federal loan bonds at auctions, and the Central Bank regularly holds auctions to provide and withdraw liquidity.

Economic theory is actively developing, especially in the field of combinatorial and repeated auctions, Andreyanov notes: "Any breakthrough in, say, advertising auctions will be in great demand." But economics is not limited to theories. Where theoretical models fail, applied economists take over, learning to evaluate econometric models and make predictions based on them. "In the age of computers, it will become easier and easier to do this, and the demand for theoretical results will naturally decrease," Andreyanov said.

About the Nobel Prize in Economics

The award, which is usually called the Nobel Prize in Economics, in fact has no direct relation to Alfred Nobel. Unlike all other nominations, it was not created by the bequest of a Swedish philanthropist, but was established by the Swedish State Bank in honor of its three hundredth anniversary and officially named after the Swedish State Bank Prize for Economics in memory of Alfred Nobel. The prize is paid at the expense of funds transferred by the State Bank of Sweden to the Nobel Foundation, but the Royal Swedish Academy of Sciences chooses the laureates. The size of the Nobel Prize in Economics is identical to the size of the other prizes (in 2020 it is 10 million SEK), and the laureate receives the award at a ceremony in Stockholm, along with laureates in other sciences.

The Nobel Prize in Economics is the only Nobel Prize awarded annually, without a pass. In 1969–2019, the prize has already been awarded 51 times. In total, 84 people received the prize, and only 25 laureates were awarded it individually, 19 times the prize was divided between two and seven times - between three laureates.

The Nobel Prize in Economics is the oldest, the average age of its laureates is 67 years, and Esther Duflo became the youngest in 2019. The oldest recipient of the Nobel Prize in Economics (and the Nobel Prize in general) was in 2007 a native of Moscow, American economist Leonid Gurvich, who was awarded at the age of 90 "for creating the foundations of the theory of optimal mechanisms."

Among the laureates of the Nobel Prize in Economics, most of the US citizens (55) and only one representative of the USSR (Leonid Kantorovich, 1975). Last year, the Nobel Prize in Economics was awarded "for an experimental approach to the fight against global poverty" by Americans Michael Kremer and Abhijit Banerjee and Frenchwoman Esther Duflo.

In 2020, Nobel Week began on October 5, when the winners of the Medicine Prize were announced. They were American scientists Charles Rice and Harvey Alter, as well as Briton Michael Houghton, who received an award for the discovery of the hepatitis C virus. This helped create ways to treat the disease and prevent its spread through blood transfusions.

Presidents and organizations: recent Nobel Peace Prize winners

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On October 6, a physics prize was announced for his work on black holes. Briton Roger Penrose received half of the prize for the discovery that "the formation of black holes is a reliable confirmation of the general theory of relativity", and the Americans Reinhard Genzel and Andrea Ghez - for "the discovery of a supermassive compact object in the center of the galaxy." On October 7, it became known that the Nobel Prize in Chemistry was awarded for the development of the "genetic scissors" American Jennifer Doudna and French Emmanuelle Charpentier. On October 8, the American poet Louise Glück, who is often called Gluck in Russia, was named the laureate of the Literature Prize. On October 9, the Nobel Peace Prize was awarded to the World Food Program (WFP), the UN humanitarian organization that provides food for the hungry around the world.

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