

FAQs

Economics Nobel for Natural Experiments

Q What is the context?

A The 2021 Nobel Prize in Economic Sciences was awarded to three US-based economists.

- Nobel Committee awarded half the Prize to **David Card** for his “empirical contributions to labour economics”
- Other half to **Guido Imbens** and **Joshua Angrist** “for their methodological contributions to the analysis of causal relationships”



Guido Imbens (NED/USA, left), Joshua Angrist (USA, centre) and David Card (CAN, right) share the Nobel Prize for contributions to labour economics and analysis of causal relationships

● 2020: Paul Milgrom (USA), Robert Wilson (USA) “for improvements to auction theory and inventions of new auction formats”	● 2018: William Nordhaus (USA) Paul Romer (USA) “for including climate change and technological innovation in longterm economic theory”
● 2019: Abhijit Banerjee (IND), Esther Duflo (FRA/USA), Michael Kremer (USA) “for their experimental approach”	● 2017: Richard Thaler (USA) “for his contributions to behavioural economics”

Source: Nobelprize.org

Q What makes this year’s award special?

A

- This is the first time the economic prize has been divided in this fashion with one half going to one awardee and other half divided across two awardees.
- In the past, prize money was divided equally between the awardees even if the prize was for different topics as is the case this time around.

FAQs

- It may appear that the Nobel Prize has been given for two different contributions, but there is a common theme: “natural experiments.”

Q What are Natural Experiments?

A

- Economists are often interested in causal questions such as the impact of education on incomes, impact of COVID-19 on poverty and so on.
- They are also interested in understanding the direction of causality.
- Economists have used two kinds of experiments to study these causality and direction of causality questions: random experiments and natural experiments.

(I) Random experiments

- Under randomized experiments, the researchers allocate say medicines to a treatment group and compare the effect of the medicine with the control group which is not given the medicine.
- In 2019, the Nobel Committee gave awards to three scholars for their contribution to the field of randomized experiments.
- However, one cannot randomize experiments to study issues such as why certain people and regions are more unequal or have fewer educational opportunities and so on.

(II) Natural experiments

- In natural experiments, economists study a policy change or a historical event and try to determine the cause and effect relationship to explain these developments.
- The trio used such natural experiments to make some landmark contributions to economic development.
- Natural experiments are more difficult for two reasons. The first is to identify what will serve as a natural experiment.
- Second, in a random experiment, the researcher knows and controls the treatment and control groups which allows them to study the cause and effect of medicine.
- But in natural experiments, such clear differentiation is not possible because people choose their groups on their own and even move between the two groups.
- Despite the limitations, the researchers could use the natural setting to answer some big policy questions.

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Q What are Natural experiments conducted by David Card ?

A

- One question of interest for policymakers is to understand the impact of higher minimum wages on employment.
- Earlier studies showed that increasing minimum wages leads to lower unemployment.
- Economists were also not sure of the direction of causation between minimum wages and employment.
- Say a slowdown in the economy leads to higher unemployment amid lower income groups.
- This could lead to lower income groups demanding higher minimum wages. In such a case, it is higher unemployment which leads higher minimum wages.

Q What is Contribution of Angrist and Imbens ?

A

- Angrist and Imbens showed how natural experiments can be used to identify cause and effect precisely.
- We have discussed above how natural experiments make it difficult to separate control and treatment groups. This makes it difficult to establish causal relations.
- In the 1990s, the duo developed a methodology – Local Average Treatment Effect (or LATE) – which uses a two-step process to help grapple with these problems of natural experiments.
- Say, one is interested in finding the impact of an additional year of schooling on the incomes of people.
- By using the LATE approach, they showed that effect on income of an additional year of education is around 9%.
- While it may not be possible to determine individuals in the group, one can estimate the size of the impact.

Q What is the importance of the award today?

A

- Earlier it was difficult to identify natural experiments and even if one identified them, it was difficult to generate data from these experiments.

FAQs

- With increased digitalization and dissemination of archival records, it has not just become easier to identify natural experiments but also get data.
- Economists have been using natural experiments to help us understand the impact of past policies.
- As the 2020 pandemic struck, economists used the natural experiments approach extensively to analyse how previous pandemics impacted different regions and tried to draw policy lessons.

Q How is it related to Indian Context ?

A

- The methodology date back to the early and mid-90s and they have already had a tremendous influence on the research undertaken in several developing countries such as India.
- For instance, in India, too, it is commonly held that higher minimum wages will be counterproductive for workers.
- It is noteworthy that last year, in the wake of the Covid-induced lockdowns, several states, including UP, had summarily suspended several labour laws.
- This included the ones regulating minimum wages, arguing that such a move will boost employment.
- The main learning is that minimum wages can be increased in India without worrying about reducing employment.