



Leibniz Institute for Financial Research SAFE  
Sustainable Architecture for Finance in Europe (<https://safe-frankfurt.de/>)

## SAFE Finance Blog

### "A Groundbreaking Decision"

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10/10/2018

Alexander Ludwig: William Nordhaus and Paul Romer have established and shaped modern endogenous growth theory and environmental and climate economics



**The American economists William Nordhaus of Yale University and Paul Romer of New York University's Stern Business School have been awarded the Nobel Prize in Economics. How do you assess this decision?**

The decision of the Nobel Committee commends the contributions of two researchers on long-term macroeconomics and technical progress with different but very similar facets. This is a groundbreaking decision that highlights the importance of long term macroeconomics and at the same time builds bridges

between two different strands of literature of economic research.

### **What do you consider the central contribution of Paul Romer?**

Paul Romer is the founder of modern endogenous growth theory, for which he laid the foundation in 1983 with his doctoral thesis. At the heart of this theory are economic models that shed light on how growth occurs in an economy and why also developed economies are able to continue to grow. They also highlight why in decentralized competition sectors within the economy grow too much or too little, relative to what would be optimal for the overall welfare of a nation (or of nations).

### **Why is this discrepancy?**

The reason for this are external effects that a company does not take into account in its decision to develop new products or improve the quality of existing ones. Such externalities can have a positive impact, as through new breakthrough technologies or the accumulation of education. At SAFE we use advancements of these models in research, for example to analyze the different interactions between growth, health and life expectancy (<https://safe-frankfurt.de/research/research-projects/research-projects-details/controller/project/projectname/macroeconomic-effects-of-demographic-change.html>). Again, positive externalities through new technologies are in the foreground. But external effects can also be negative: for instance, if the environment is polluted in the production process. When it comes to the environment, the bridge to the second prize winner is built.

### **How do you see the work of William Nordhaus?**

Nordhaus developed early in the 1980s economic models that included elements from natural sciences to examine the interaction between greenhouse gas emissions and economic development. These models are used in environmental economic research to simulate the growth paths of an economy and the environmental consequences.

### **What influence do the two economists have on present research?**

Recent economic work broadens consistently the connection between the named scientific strands which were developed and uniquely influenced by these researchers. Explicitly, links between multisector models, endogenous technological progress, and the question of which state interventions, in terms of environmental pollution and the accumulation of these, are welfare-optimal, are used for excellent scientific publications (for examples, see here (<http://www.nber.org/papers/w17348>) and here (<https://economics.mit.edu/files/8076>)).

*Alexander Ludwig (<https://safe-frankfurt.de/research/researchers/researchers-details/showauthor/112-ludwig.html>) is Program Director for "Macro Finance – Monetary Policy and Fiscal Stability" at the Research Center SAFE.*

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## Leibniz Institute for Financial Research SAFE

Theodor-W.-Adorno-Platz 3  
60323 Frankfurt am Main

Phone: +49 69 798 30080  
Fax: +49 69 798 30077  
Email: [info@safe-frankfurt.de](mailto:info@safe-frankfurt.de)

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