

[← Working Papers](#)

# Gravity in FX R-Squared: Understanding the Factor Structure in Exchange Rates

Hanno Lustig & Robert J. Richmond

SHARE



---

WORKING PAPER 23773

DOI 10.3386/w23773

ISSUE DATE September 2017

---

We relate the risk characteristics of currencies to measures of physical, cultural, and institutional distance. The currencies of countries which are more distant from other countries are more exposed to systematic currency risk. This is due to a gravity effect in the factor structure of bilateral exchange rates: When a currency appreciates against a basket of all other currencies, its bilateral exchange rate appreciates more against the currencies of distant countries. As a result, currencies of peripheral countries are more exposed to the systematic variation than currencies of central countries. Trade network centrality is the best predictor of a currency's average exposure to systematic risk.

[Download a PDF](#)

[Information on access](#)

## Acknowledgements and Disclosures



## Citation and Citation Data



## Related

### TOPICS

International Economics  
International Finance  
Financial Economics  
Financial Markets

### PROGRAMS

Asset Pricing  
International Finance and Macroeconomics  
International Trade and Investment

## More from the NBER

In addition to [working papers](#), the NBER disseminates affiliates' latest findings through a range of free periodicals — the [NBER Reporter](#), the [NBER Digest](#), the [Bulletin on Health](#), and the [Bulletin on Entrepreneurship](#) — as well as online [conference reports](#), [video lectures](#), and [interviews](#).



Martin Feldstein Lecture, Summer Institute 2025  
**The Fiscal Future**

N. Gregory Mankiw, Harvard University and NBER  
July 10, 2025

**2025, 17th Annual Feldstein Lecture, N. Gregory Mankiw, "The Fiscal Future"**

FELDSTEIN LECTURE

PRESENTER: [N. GREGORY MANKIW](#)

N. Gregory Mankiw, Robert M. Beren Professor of Economics at Harvard University, presented the 2025 Martin Feldstein...



Methods Lecture, Summer Institute 2025  
**Uncovering Causal Mechanisms:  
Mediation Analysis and  
Surrogate Indices**

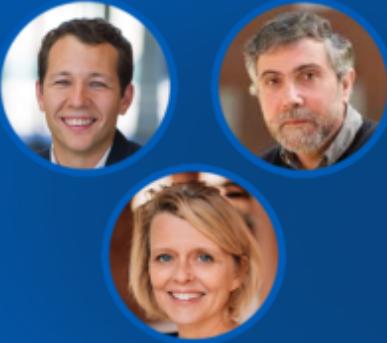
Raj Chetty, Harvard University and NBER  
Kosuke Imai, Harvard University  
July 24, 2025



**2025, Methods Lecture, Raj Chetty and Kosuke Imai, "Uncovering Causal Mechanisms:  
Mediation Analysis and Surrogate Indices"**

PRESENTERS: [RAJ CHETTY](#) & [KOSUKE IMAI](#)

SlidesBackground materials on mediation  
Imai, Kosuke, Dustin Tingley, and Teppei Yamamoto. (2013). "Experimental Designs..."



International Trade and Macroeconomics, Summer Institute 2025

## **Panel on The Future of the Global Economy**

Oleg Itskhoki, Harvard University and NBER

Paul Krugman, City University of New York and NBER

Linda Tesar, University of Michigan and NBER

July 8, 2025

### **2025, International Trade and Macroeconomics, "Panel on The Future of the Global Economy"**

#### PANEL DISCUSSION

PRESENTERS: [OLEG ITSKHOKI](#), [PAUL R. KRUGMAN](#) & [LINDA TESAR](#)

Supported by the Alfred P. Sloan Foundation grant #G-2023-19633, the Lynde and Harry Bradley Foundation grant #20251294...

### **National Bureau of Economic Research**

#### Contact Us

1050 Massachusetts Avenue

Cambridge, MA 02138

[617-868-3900](tel:617-868-3900)

[info@nber.org](mailto:info@nber.org)

[webaccessibility@nber.org](mailto:webaccessibility@nber.org)

Accessibility Policy

Diversity Policy

Privacy Policy

FOLLOW



© 2026 NATIONAL BUREAU OF ECONOMIC RESEARCH. ALL RIGHTS RESERVED.