



# Reinhart and Rogoff Crisis

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# Agenda



Background



The Research



Reproducibility



Conclusion



Background

# Carmen Reinhart & Kenneth Rogoff

Authors of Growth in Time of Debt



Professor of International  
Financial System at Harvard

“illuminating work [...] on the  
history of financial crises and  
their aftermaths”

Professor of Public Policy and  
Economics at Harvard

Research Fellow at the  
Centre for Economic Policy  
Research & National Bureau  
of Economic Research

Authors of “This Time Is  
Different: Eight Centuries of  
Financial Folly”



# Economic Terms



**Economic Growth:** increase in amount of goods and services produced per capita.



**External Debt:** total debt that a government owes to foreign creditors.



**Austerity:** economic policy that aims to decrease government spending.



**Deficit Hawk:** people who puts emphasis on controlled government spending

# Economic Terms

$$\text{GDP} = C + I + G + (X - M)$$

Investment

Net Exports

Consumption

Government Spending

# The Research

# Growth in a Time of Debt



Find relationships between a country's growth, debt, and inflation.



When government debt reaches 90% of GDP → median growth rate fall by one percent



When the external debt of a country reaches 60% of GDP → annual growth rate decreased by 2%





# The Impact

Their research was published in the American Economic Review and was used to validate economic policy.

Their main finding was “one of the most cited stats” during the 2008 recession, and was used by a lot of deficit hawks.

Used to **validate** economic policy.

One of the **most cited** stats during the 2008 recession.



Reproducibility

# Irreproducibility



Thomas Herndon, graduate student at Univ. of Mass, Amherst was unable to replicate the results

Berg and Hartley: original conclusion was based on outliers

# Analysis Issues

## 3 Main Errors



Data **excluded** 14  
years of high debt  
and growth



Weighting system  
**didn't account** for  
the amount of years  
associated with data  
points



**Coding error** that  
**excluded** high debt  
& average growth  
countries



Conclusion

# Why do we care?



Correlation  
vs  
Causation



Widely used and  
cited in various  
reports



Highlights need for  
Reproducible Data

Question for you:

Taking the whole presentation into consideration who is more at fault, R&R or the people who used the data without checking it first? \_\_\_\_\_



Question for you:

If you were in the position of Thomas Herndon, how would you go about trying to reproduce R&R's research?





Questions?