THIS TIME IS DIFFERENT

Eight Centuries of Financial Folly

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&
KENNETH S. ROGOFF

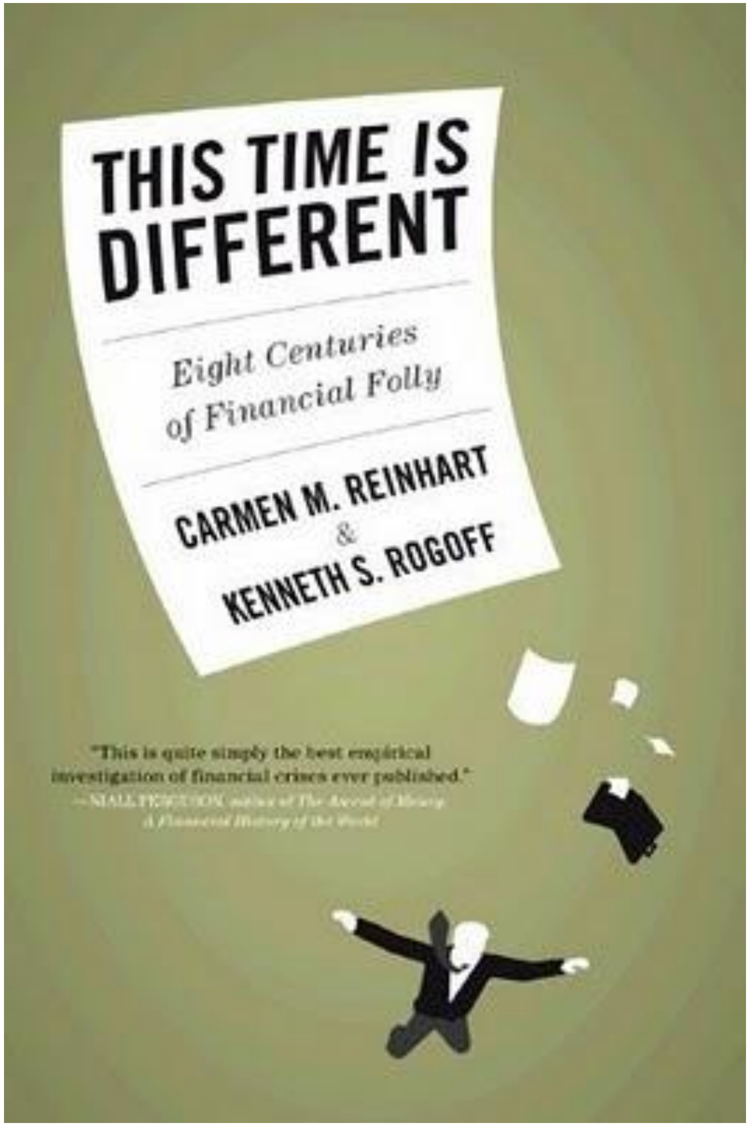
"This is quite simply the best empirical investigation of financial crises ever published."
—NIALL FERGUSON, author of *The Ascent of Money: A Financial History of the World*

Carmen Reinhart

- Born 1955 in Havana, Cuba (nee Castellanos)
- Moved to US in 1966
- Ph.D. in Economics from Columbia U
- Economist at Bear Sterns, IMF
- Research in macroeconomics and international finance
- Senior Fellow at Peterson Institute for International Economics

- Born 1953, grew up in Rochester, NY
- Grandmaster in chess at 14
- Ph.D. in economics (MIT)
- Economist at IMF, Federal Reserve
- Taught at U of Wisconsin, U of California, Berkeley, and Princeton
- Currently Professor of Public Policy and Economics at Harvard

Kenneth Rogoff



Eight Centuries of Financial Folly

- "panoramic" analysis of financial crises
- dataset spans 66 countries, 5 continents, 800 years
- major defaults typically spaced years/decades apart
- creates illusion that "this time is different"

Types of Financial Crises:

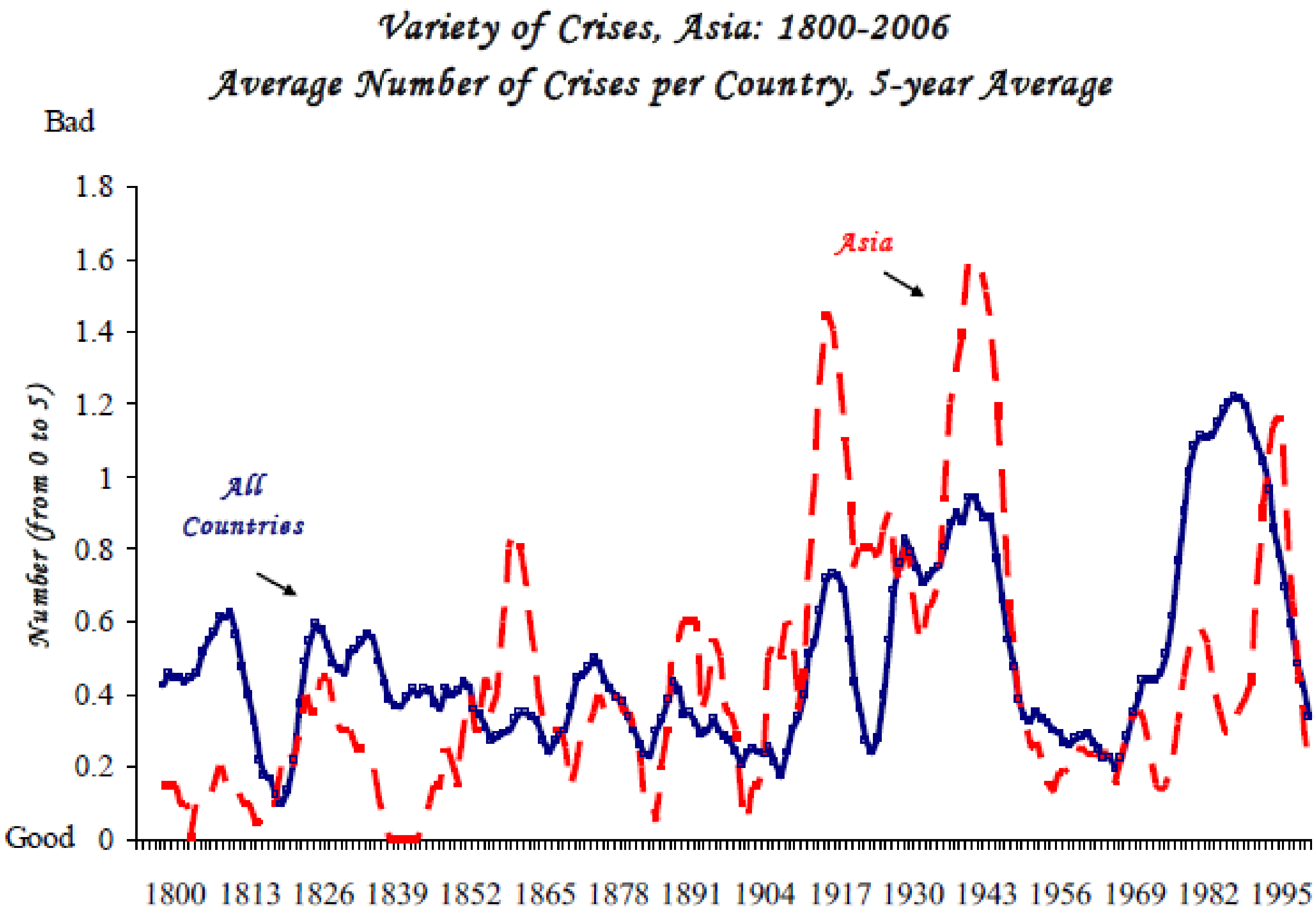
1. External sovereign default
2. Domestic sovereign default
3. Banking crises
4. Currency crashes
5. Inflation crises

defined by events

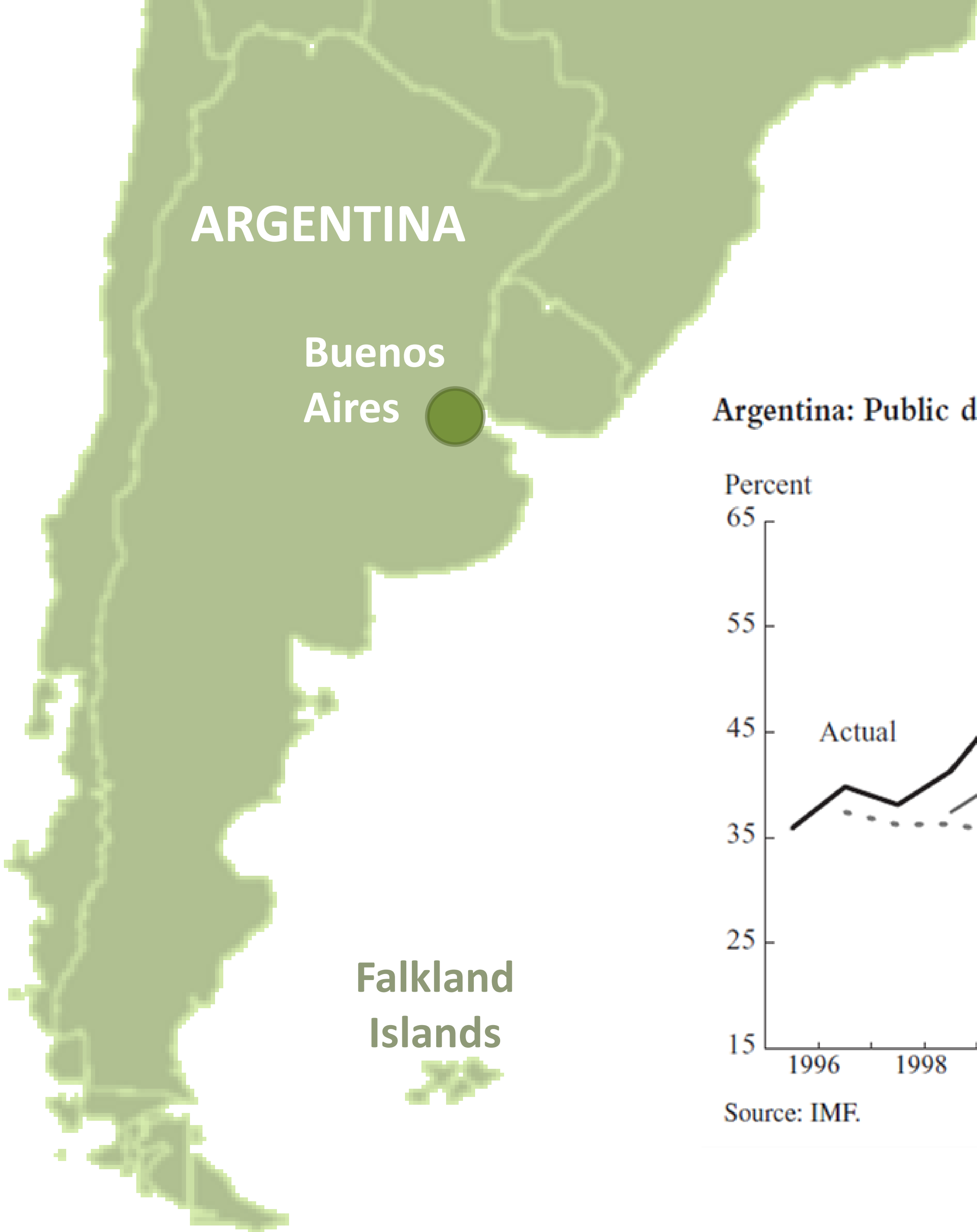
defined by quantitative thresholds

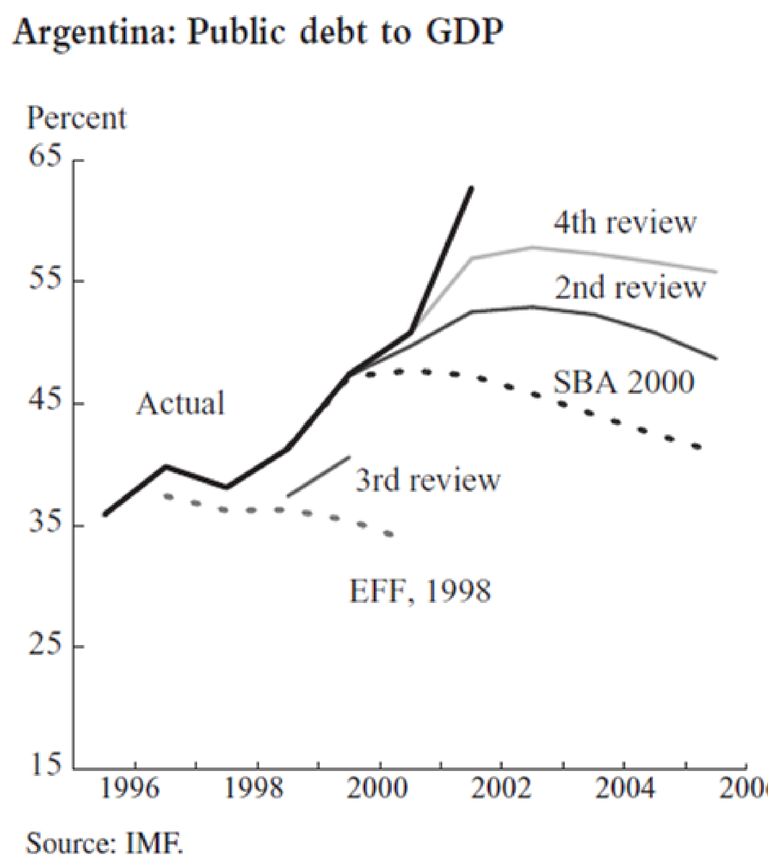
Excluded from analysis:

- Consumer debt default
- Corporate debt default



- ***Average number of crises per country ranges from low of 0.1 to high of 1.2***
- ***The average for all countries is trending up 1900 – 2000***


ARGENTINA
Buenos
Aires
Falkland
Islands


Argentina: Public debt to GDP
Percent
65
55
45
35
25
15
1996
1998
2000
2002
2004
2006
4th review
2nd review
SBA 2000
Actual
3rd review
EFF, 1998
Source: IMF.

Plaza de Mayo, Buenos Aires, December 19, 2001

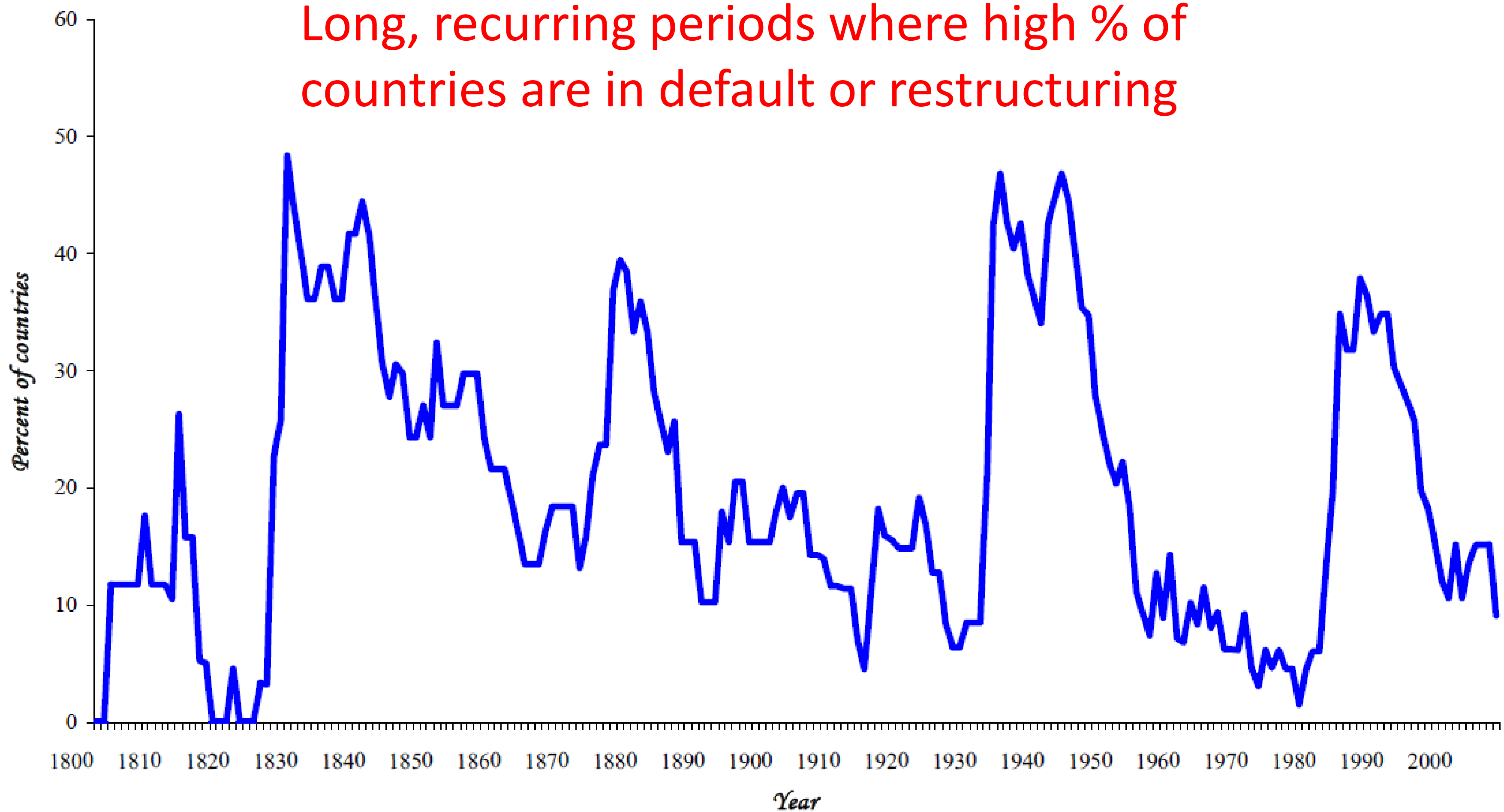
1. External Sovereign Default:

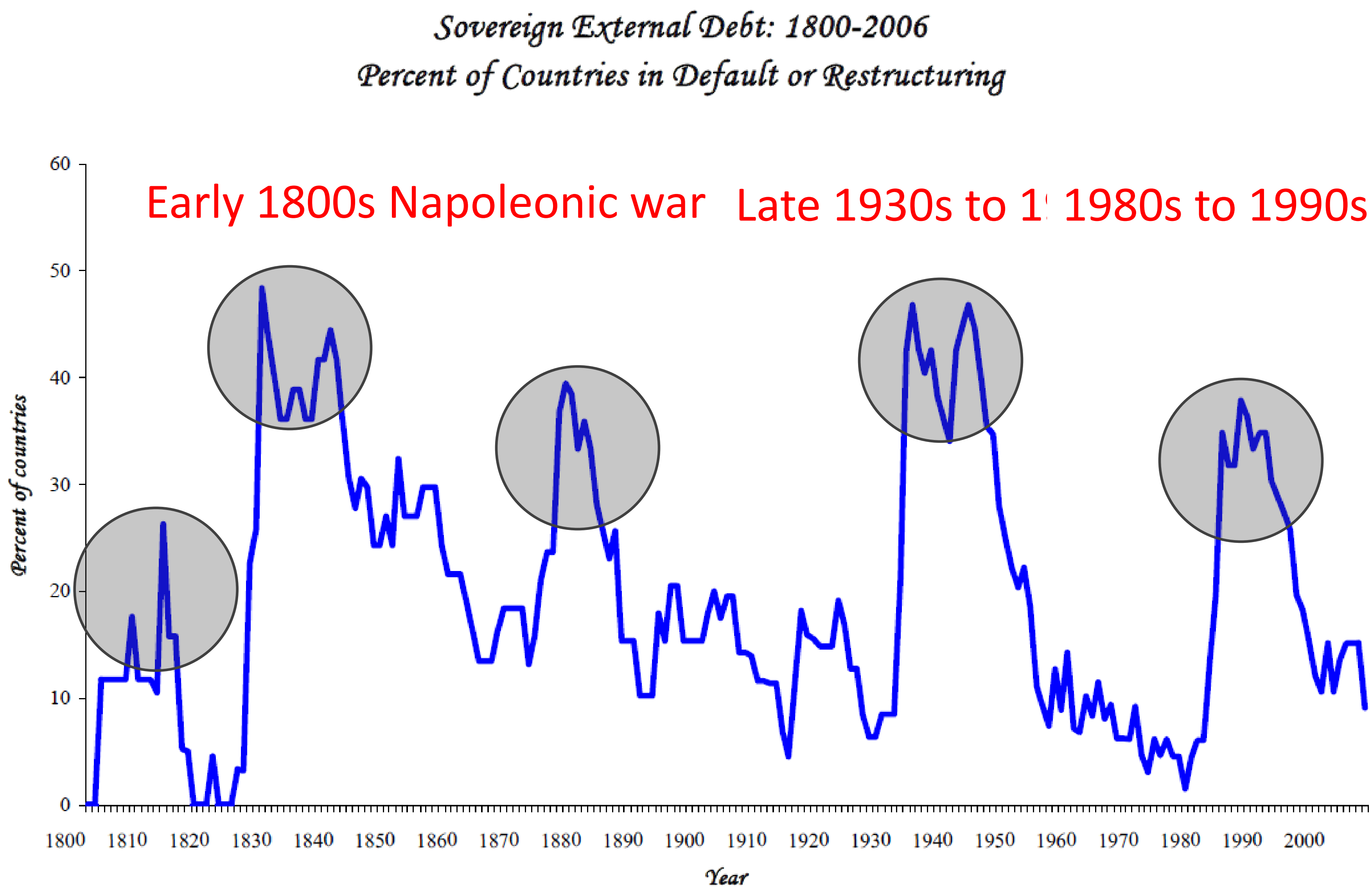
- Involves sovereign debt held by foreign residents, typically in foreign currency
- Defined as failure to meet a principal or interest payment on the due date / within the grace period
- Includes rescheduled debt ultimately extinguished on terms less favorable than original obligation

External Defaults in Europe 1300 - 1799

Source: Reinhart, Rogoff 2008

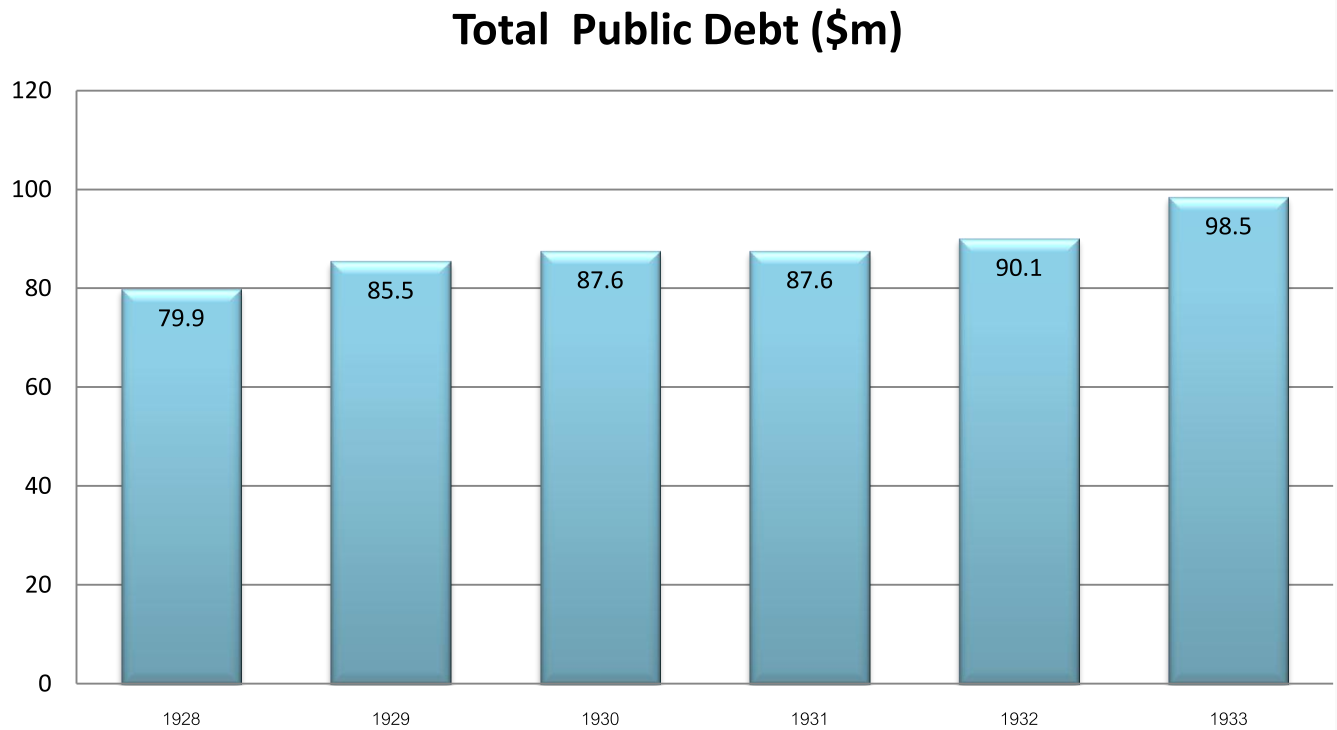
Sovereign External Debt: 1800-2006
Percent of Countries in Default or Restructuring

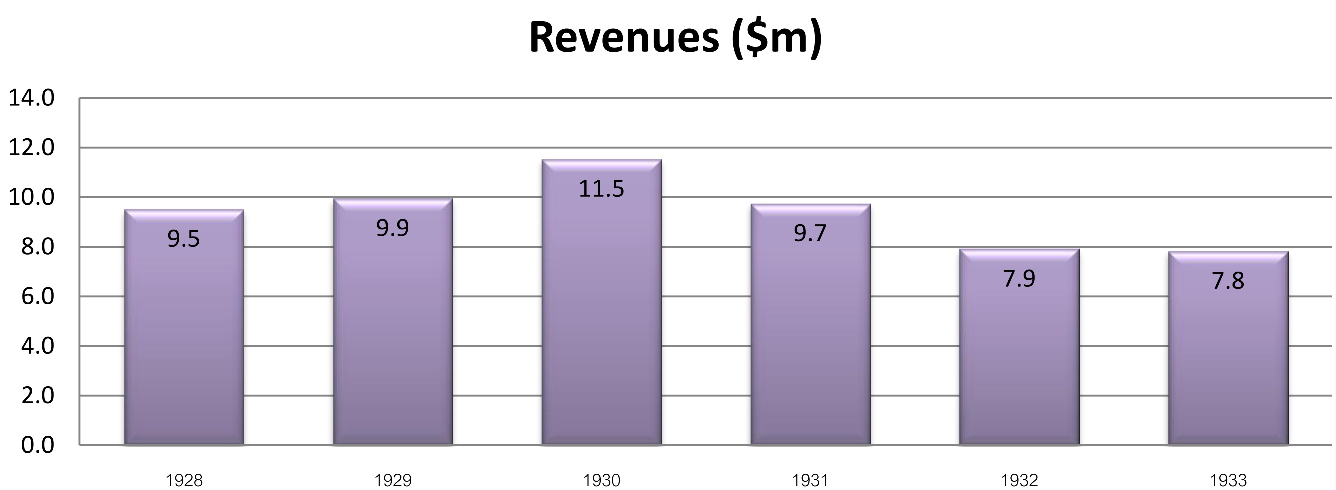




Sovereign External Debt: 1800-2006
Percent of Countries in Default or Restructuring
Early 1800s Napoleonic war
Late 1930s to 1!
1980s to 1990s
60
50
40
30
20
10
0
Percent of countries
1800
1810
1820
1830
1840
1850
1860
1870
1880
1890
1900
1910
1920
1930
1940
1950
1960
1970
1980
1990
2000
Year


Bering Sea
Chukchi Sea
Bering Strait
ARCTIC OCEAN
Axel Heiberg Island
Ellesmere Island
Greenland Sea
Norwegian Sea
Torshavn
Patrick Island
Sverdrup Islands
Beaufort Sea
GREENLAND
Queen Elizabeth Islands
Denmark Strait
ICELAND
Melville Island
Reykjavik
Banks Island
Devon Island
Mt Mckinley
Prince of Wales Island
Baffin Bay
Victoria Island
Boothia Pen.
Baffin Island
YUKON TERRITORY
Great Bear Lake
Melville Pen.
Davis Strait
Gulf of Alaska
Mt Logan
Whitehorse
NUNAVUT
Nuuk (Godthab)
NORTHWEST TERRITORIES
Iqaluit
Cape Howe
PACIFIC OCEAN
Juneau
Yellowknife
Hudson Strait
Great Slave Lake
0
500 Miles
0
500 KM
Lake Athabasca
Labrador Sea
Queen Charlotte Islands
Hudson Bay
ALBERTA
BRITISH COLUMBIA
NEWFOUNDLAND & LABRADOR
Edmonton
MANITOBA
Vancouver Island
Newfoundland
Calgary
Lake Winnipeg
CANADA
St. John's
Victoria
Vancouver
SASKATCHEWAN
Olympic Mts
ONTARIO
QUEBEC
Seattle
Gulf of St. Lawrence
Olympia
Spokane
Regina
Portland
Vancouver
Salem
Winnipeg
Lake Nipigon
NEW BRUNSWICK
PRINCE EDWARD ISLAND
Charlottetown
Quebec
Helena
Fredericton
Bismarck
L. Superior
Halifax
Montreal
NOVA SCOTIA
Boise
Augusta
Ottawa
L. Huron
Montpelier
Minneapolis
St. Paul
ATLANTIC OCEAN
UNITED STATES
Toronto
Concord
Boston
Sacramento
Milwaukee
Albany
Cape Cod
Carson City
Salt Lake City
Lansing
Buffalo
San Francisco
Oakland
Madison
Hartford
Cheyenne
Chicago
Detroit
New York
Omaha
Cleveland
Denver
Lincoln
Des Moines
Harrisburg
Trenton





Public debt
↑ 23%

Debt to revenue ↑
8.4 to 12.6

Exports ↓ 27%
imports ↓ 44%

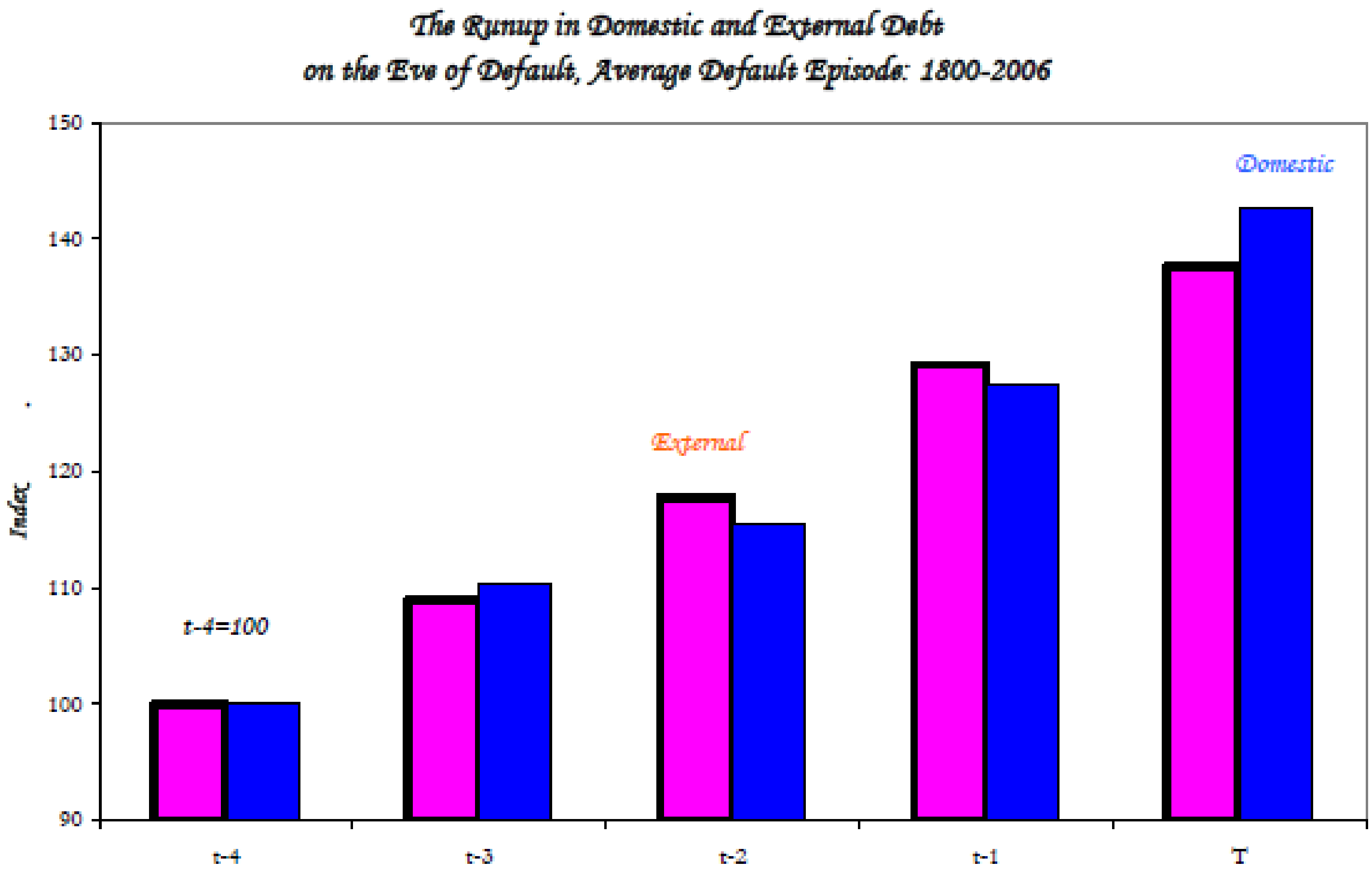
Revenues
↓ 18%

Parade to Colonial Building, Newfoundland 1932

2. Domestic Sovereign Default:

- Involves sovereign domestic debt held by local residents, typically in domestic currency
- Failure to meet principal or interest payment
- May involve freezing or forcible conversion of deposits to local currency
- Largely ignored in empirical studies of debt and inflation because historical data is unavailable

Figure 10



Sources: See Appendix I and Reinhart and Rogoff (2008a).
Notes: *T* refers to the year of the external debt crisis.

3. Banking Crises:

- Marked by either:
  1. Bank run(s) followed by closure, merger, or public sector takeover; or
  2. Closure, merging, takeover, or large scale government assistance, followed by others
- Type I – systemic / severe
- Type II – financial distress / milder

Paris 1720

New York City 1931

Canada 1985

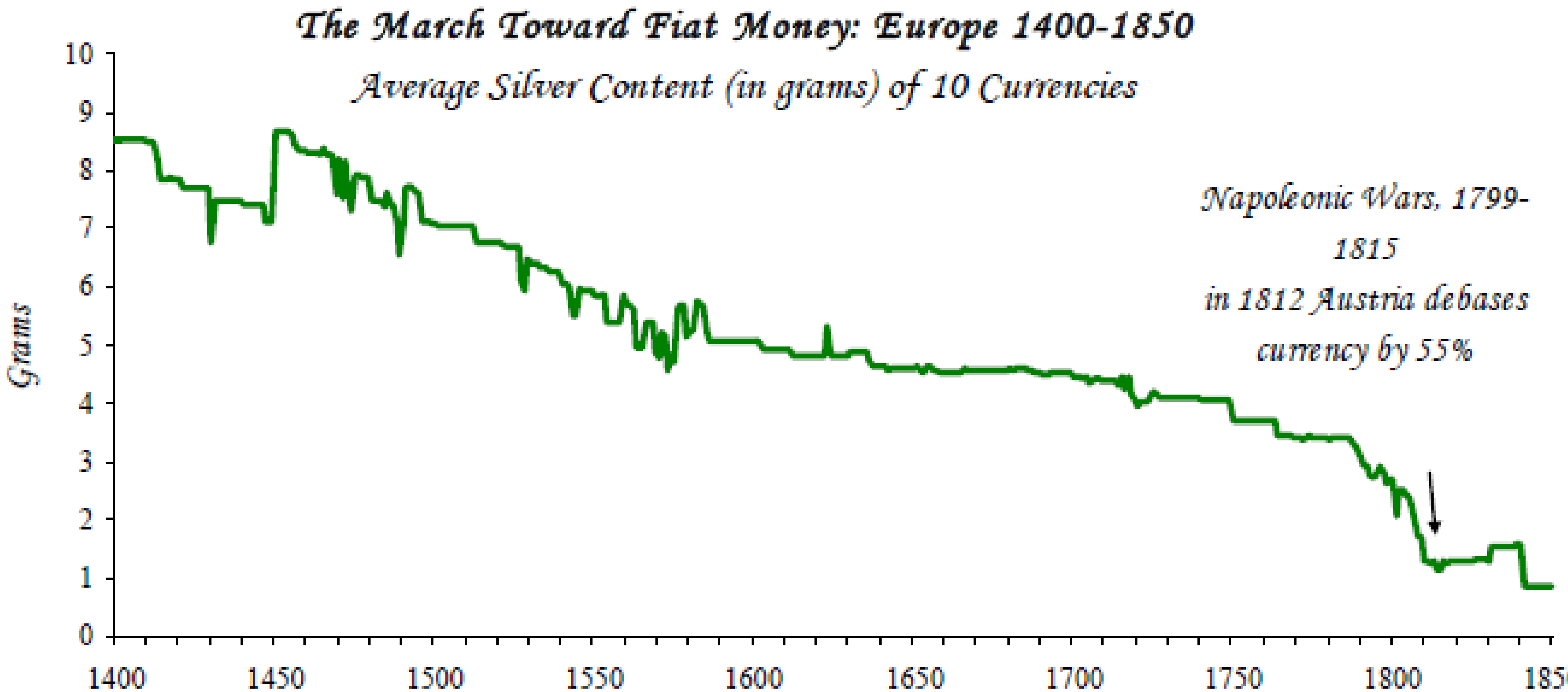
Britain 2007

4. Currency Crashes:

- Annual depreciation versus anchor currency (currently US$) of 15% or more
- Currency debasement (Type I) – reduction of metallic content of coins of 5% or more
- Currency debasement (Type II) – new currency replaces a much-depreciated earlier currency

China 1948

Figure 12.



Sources: Primarily Allen and Unger and other sources listed in Table AI.4.
Notes: In the cases where there is more than one currency circulating in a particular country (in Spain, for example, we have the New Castille maravedi and the Valencia dinar) we calculate the simple average.

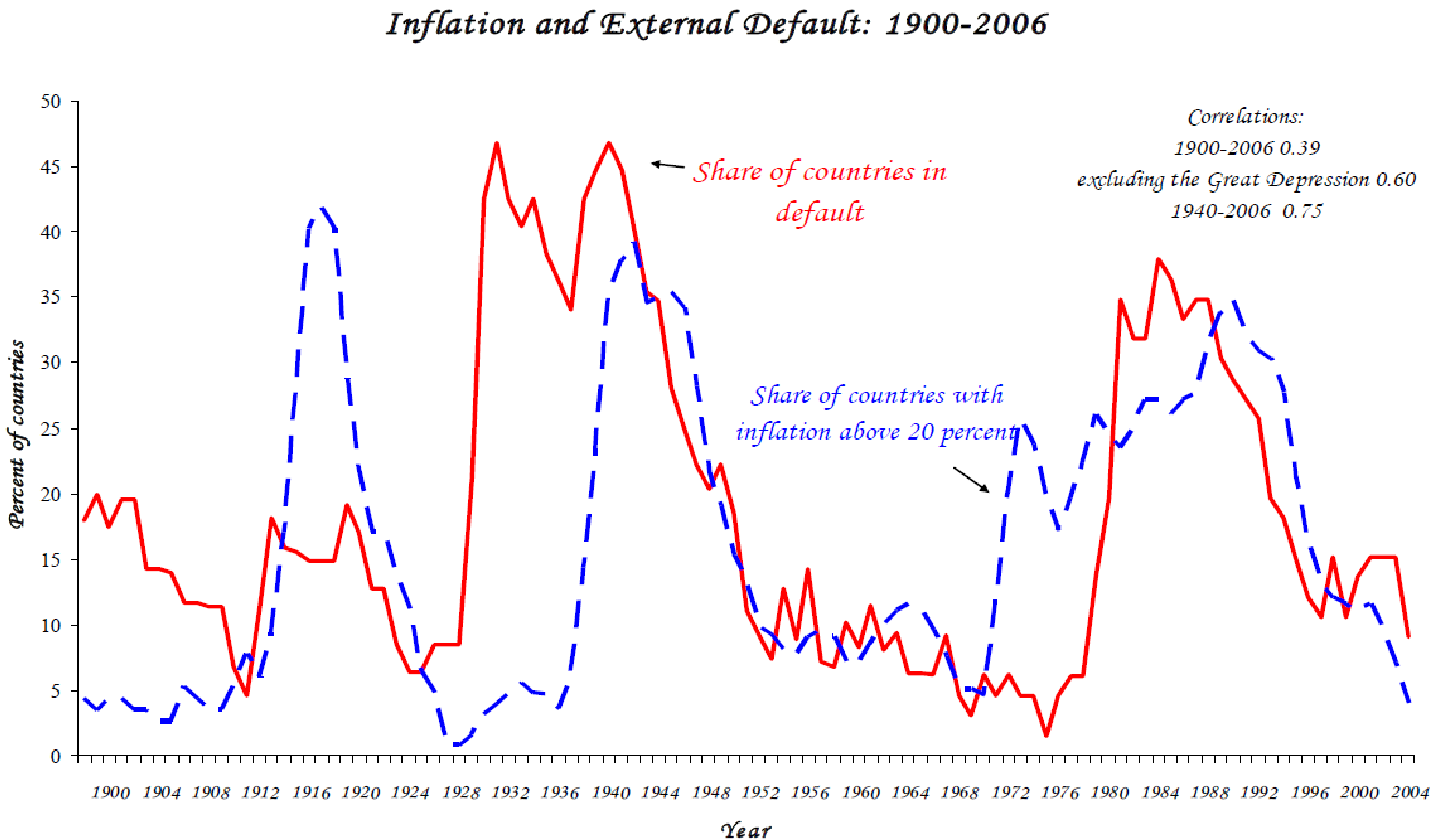
5. Inflation Crises:

- Annual inflation rate of 20% or higher
- Extreme cases include annual inflation rate over 40%

Hungarian pengo 1946: prices doubled every 15.3 hours

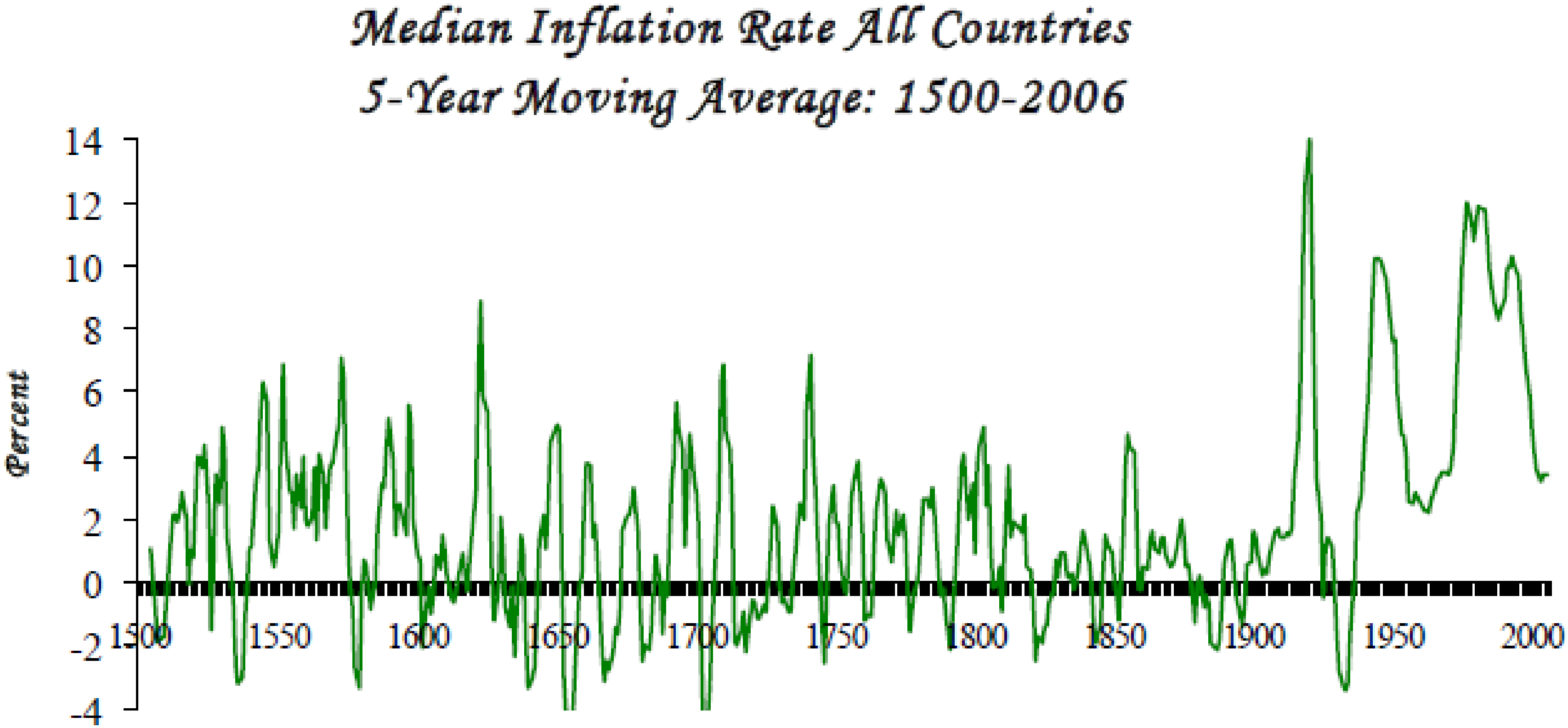
Inflation 4.19×10^{16} %

(41.9 quadrillion percent)

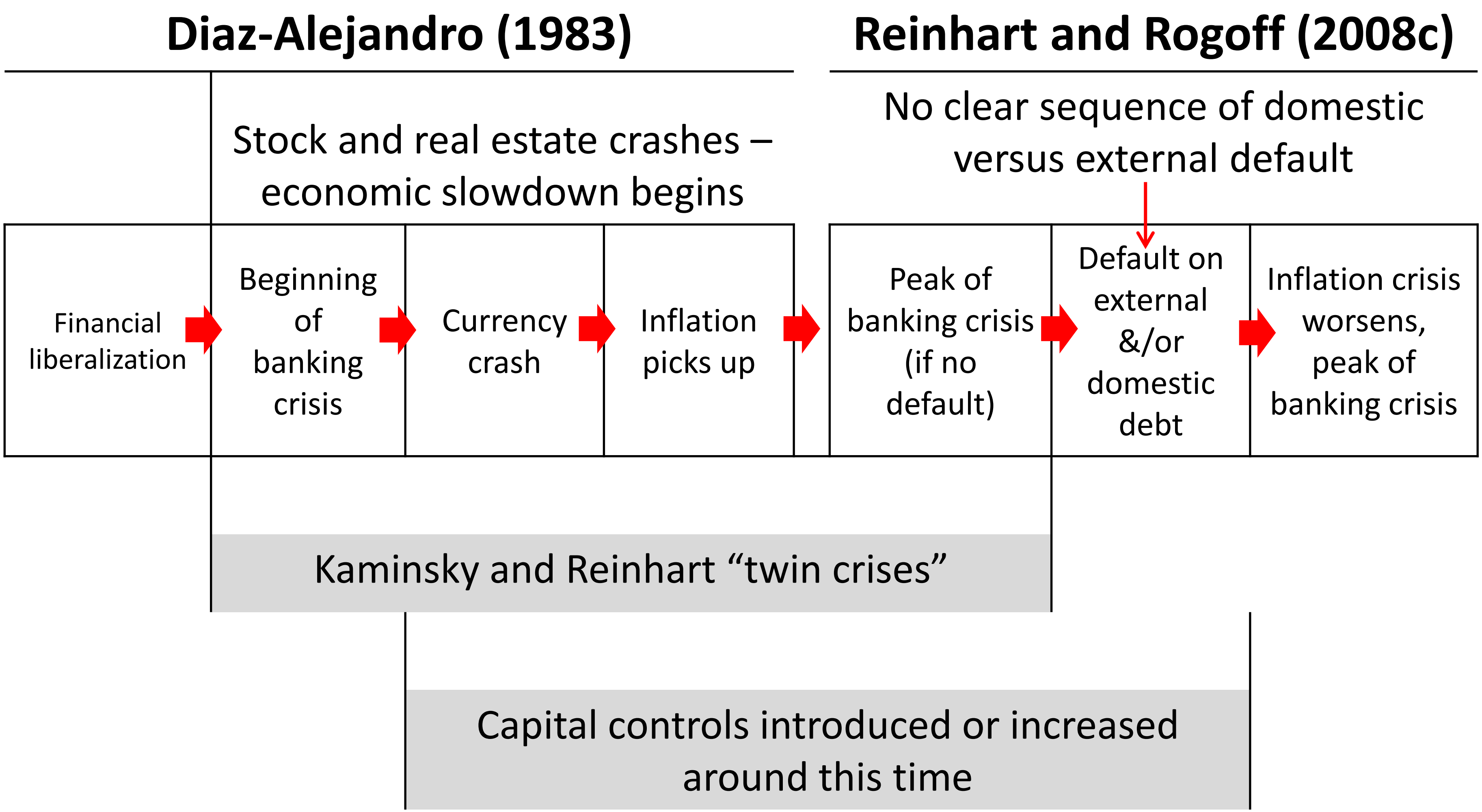


Sources: For share of countries in default, see Figure 1; for high inflation episodes, see Appendix I.
Notes: Both the inflation and default probabilities are simple unweighted averages.

Figure 13


Median Inflation Rate All Countries
5-Year Moving Average: 1500-2006
Percent
14
12
10
8
6
4
2
0
-2
-4
1500
1550
1600
1650
1700
1750
1800
1850
1900
1950
2000

Sequence of Events



What is a Global Crisis?

1. One or more financial centres are in a severe or systemic crisis
   - At least one country has a significant share of world GDP
   - Directly or indirectly affects financial flows
2. Involves two or more distinct regions

What is a Global Crisis?

3. At least three countries are in crisis in each region
4. Composite GDP-weighted index average global financial turbulence is at least one standard deviation above normal

Examples of Global Crises

Episode	Financial Centre	Regions	Countries
The crisis of 1825 – 1826	*United Kingdom*	*Europe Latin America*	*Greece, Portugal, and most of Latin America defaulted*
The panic of 1907	*United States*	*Europe Asia Latin America*	*Banking panics in France, Italy, Japan, Mexico, and Chile*
The Great Depression 1929 – 1938	*United States and France*	*All regions*	*All countries*

Contagion: London 1825 - 1826

Major commercial and financial crisis in London, 1825 – 1826

Quickly spreads to continental Europe

Bolivia, Chile, Colombia,

Ecuador and Venezuela default

Peru defaults 1826

Latin America ... ability to pay debt

Source: Reinhart, Rogoff 2008

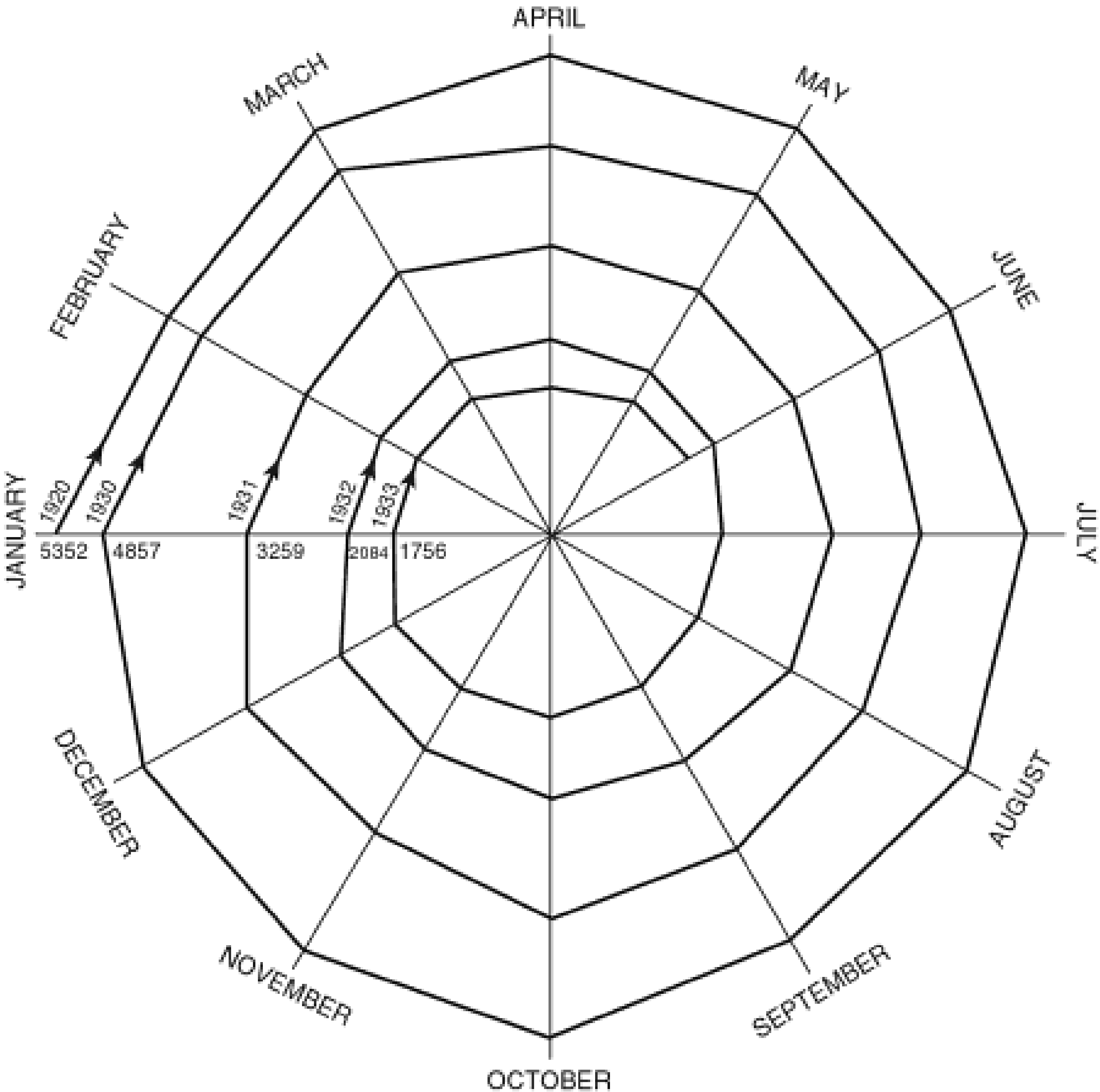


Figure 16.9. The contracting spiral of world trade month by month, January 1929–June 1933.
Source: Monatsberichte des Österreichischen Institutes für Konjunkturforschung 4 (1933): 63.

Financial Crises: Key Insights

- Serial default is nearly universal as countries pass through emerging market stage (100 – 200 years)
- Commodity prices are leading indicators of capital flow cycles
- Waves of increased capital mobility are often followed by defaults and banking crises

Financial Crises: Key Insights

- Default is often accompanied by high inflation, currency crashes, and debasements
- Financial liberalization related to banking crises
- Duration of defaults has decreased from 6 years pre-WWII to 3 years
- Number of years separating defaults has decreased

This Time It's Different Syndrome

"Technology has changed,
the height of humans has changed,
and fashions have changed.

Yet the ability of governments and investors
to delude themselves, giving rise to periodic
bouts of euphoria that usually end in tears,
seems to have remained a constant."

Sources:

http://www.nber.org/~wbuiter/cr1.pdf This Time is Different: A Panoramic View of Eight Centuries of
Financial Crises* Carmen M. Reinhart, *University of Maryland and NBER* Kenneth S. Rogoff, *Harvard University and NBER* April 16, 2008

Book review in Harvard Magazine
http://harvardmagazine.com/2010/01/david-warsh-reviews-this-time-is-different-by-reinhart-and-rogoff