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Asia Chartbook:
Crises, Credit and Debt, 1835-2013

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I. Key to Charts and Methodology Notes

For working definitions of banking, currency, debt, and inflation crises, see the extensive discussion in Reinhart and Rogoff (2009a and 2010). As to the crises highlighted in the country profiles, our focus is on primarily external sovereign default (also its less common counterpart--domestic sovereign default) and banking crises. Many countries have a rich history of recurring (and often chronic) exchange rate crashes and inflation crises, particularly (but not exclusively) in post World War II Latin America. We only provide limited information on these recurring follies in monetary history.¹ We do include, highlight and date all hyperinflation episodes, as these have been associated with the complete or near complete liquidation (through de facto default) of domestic currency debts.

Key to charts

Besides the events discussed above, in a few charts we highlight “near- default” episodes, which involve some form of international assistance to avoid a default or a restructuring. Their dates are also listed in the first column of the accompanying table. Some examples of sub-sovereign defaults (by states or provinces) are also flagged. In a few charts, historic currency crashes (such as the collapse of an 80-year old peg) are highlighted as well. More mundane episodes of inflation and currency crises are not shown. However, the full sample incidence (share of years) in an inflation crisis, is reported in the table below the chart, so as to provide information on chronic inflation problems.² The major output collapses shown in the tables that accompany the charts and the numerous IMF programs since 1952 (listed as a memorandum item at the bottom of the table) are not depicted in the figures, to avoid compromising clarity.

Table 1. Coloring and Shading to Highlight Events in Country Charts

¹ In the tables that accompany each country profile, we do provide, as summary statistic on inflation crises, the share of years with annual inflation above 20 per cent per annum. This inflation performance also gives a reasonable indication of the incidence of currency crashes,

² For evidence on the correlation and overlap between currency crashes and inflation crises, see Reinhart and Rogoff (2010).

Years in default or restructuring External debt		Pale shading
Years in default or restructuring Domestic debt		Dark shading
Near default, as defined in text		Bright shading
First year of banking crises		Black line/bar
Hyperinflation (annual inflation > 500%)		Medium shading
Turbulence, crises elsewhere		Medium shading

Insets of smaller tables and charts into the figures

Insets are used throughout to provide complementary information to that shown in the main figure. For example, for many advanced economies, an inset plots for household credit to GDP from the mid-1990s to the present to highlight trends in private debts ahead of the 2007-2008 crisis. In other cases, these insets provide information on the maturity composition of the debt (public or private, as the case may be) on the eve of a banking crisis be it default or hyperinflation. The distribution of public and private debt before and after a crisis also provide documentation of the numerous crisis cases where the government assumed important quantities of private debts.

Descriptive statistics in the tables to each country

Descriptive statistics are mostly self-explanatory, but two particulars merit explanation. The first year of banking crises are listed and those shown in *italics* indicate that the episode in question was not deemed to be a systemic crisis. Near default episodes are also shown in *italics* and not counted in the tally of default. The last column provides information on the largest annual output declines, usually the top five, but more or less when relevant. Both the year and the percent decline (in parentheses) are given. For full output collapse episodes, the interested reader is referred to Barro and Ursua (2009).

The bottom portion of the table gives memorandum items on IMF programs with the country over the period from 1952 to 2009. The first year of the program is listed as well as the total number of programs. The relevant sources are discussed below.

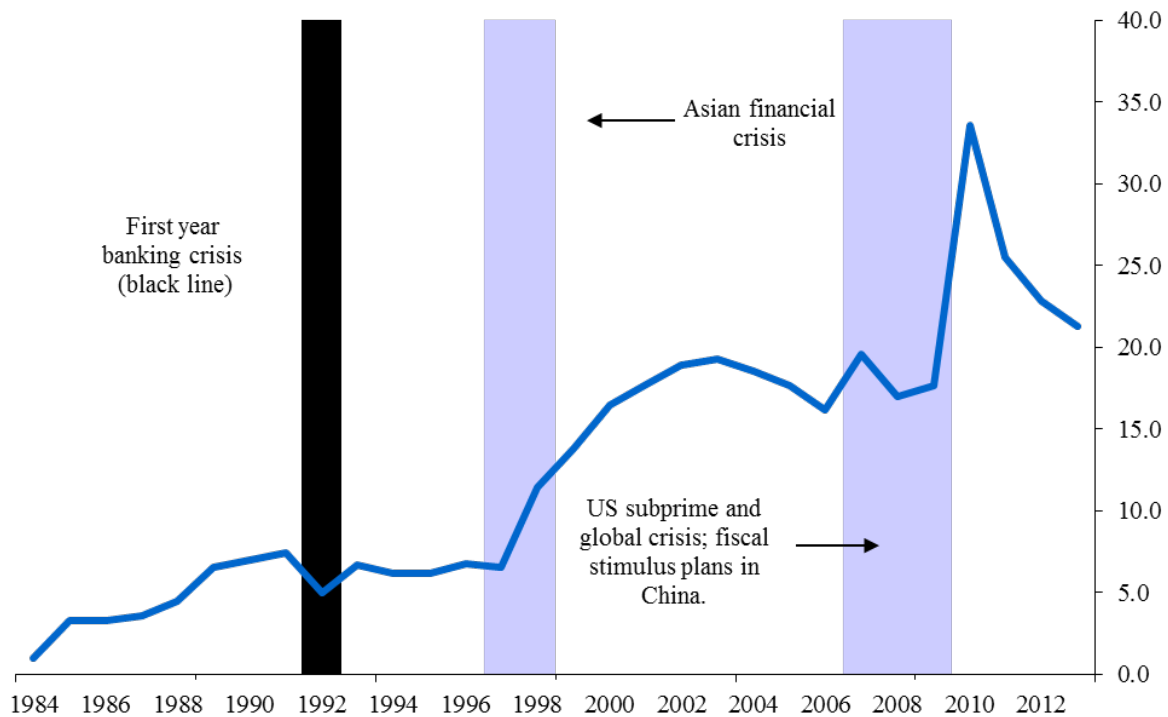
Debt ratios

Debt is usually shown as a percent of GDP and in a few cases as a percent of exports. In a handful of cases we have debt data for the earlier part of the 19th century but no GDP or trade measure to scale the debt data by. In those few cases, we show changes in debt (often over three years) to provide an indication of the debt cycle. The nominal GDP data comes from numerous scholars as well as official statistical sources. For a number of developing countries we have more data on exports than for GDP (in all cases we have post World War II nominal GDP data). In these cases the charts show the actual debt/GDP ratio for the period during which GDP data is available (say post 1920s) and use the debt/exports ratio times the average export to GDP ratio (for the period during which both series overlap) to back-cast the series.

References and sources

Most charts list the main source as Reinhart and Rogoff (2009), which has an extensive data appendices listing sources series-by-series and country-by-country over different subperiods. Additional sources listed below each graph usually indicate that we came across these sources subsequent to the publication. The sources for the IMF programs are Bird, Hussain and Joyce (2004), Mody and Saravia (2009), and the IMF's Annual Reports for several years to update these studies through 2009.

Figure 1. China: General Government Debt (domestic plus external)
and Banking Crises, 1984-2013
(as a percent of GDP)



Sources: International Monetary Fund, *World Economic Outlook*, Reinhart and Rogoff (2009) and sources cited therein, and authors' calculations.

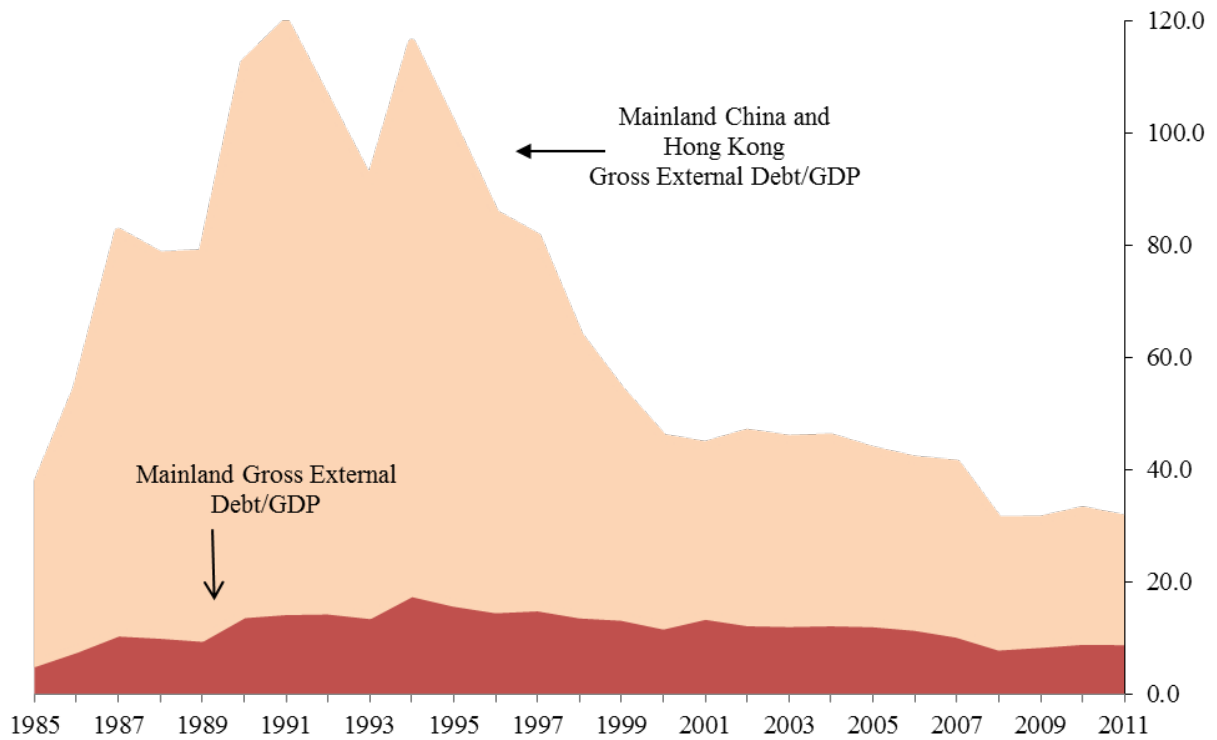
Notes: Data on central government debt outstanding (domestic plus external) is no longer published. Estimates for 2008 and 2009 are based on issuance data for those years

Default, Restructuring, Banking Crises, Growth Collapses, Hyperinflation and IMF Programs:
China, 1850-2012

External default/restructuring	Duration (in years)	Domestic default/restructuring	Banking crisis (first year)	Hyperinflation dates	Share of years in external default	Share of years in inflation crisis	5 worst output collapses year(decline) ¹
	16	1921	1863	1946-1948	12.9	10.0	1934(8.7)
	11	1932	1866				1960(3.4)
			1873				1961(17.3)
			1883				
			1898				
			1910				
			1923				
			1931				
			1934				
Number of episodes:			1998				
2		2	10	1			
Memorandum item on IMF programs, 1952-2012							
Dates of programs							Total
1981, 1986							2

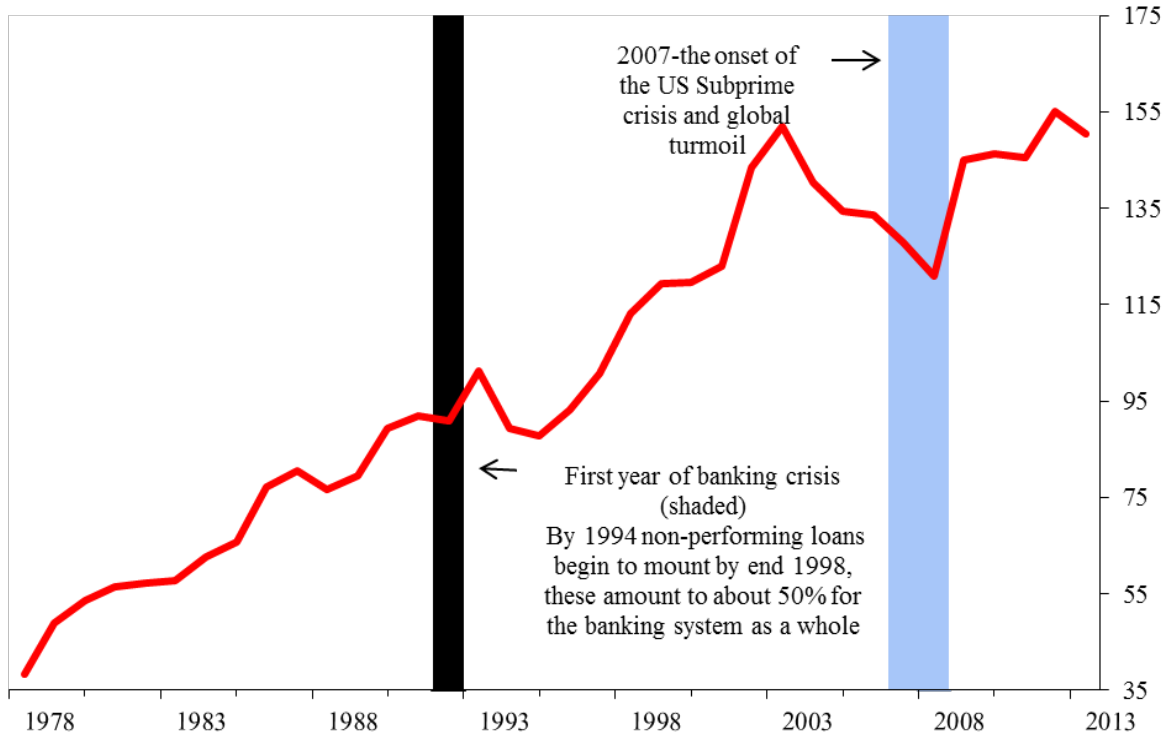
¹No output data from 1939 to 1951.

Figure 2. China and Hong Kong: External (public plus private) Debt,
1985-2011
(as a percent of GDP)



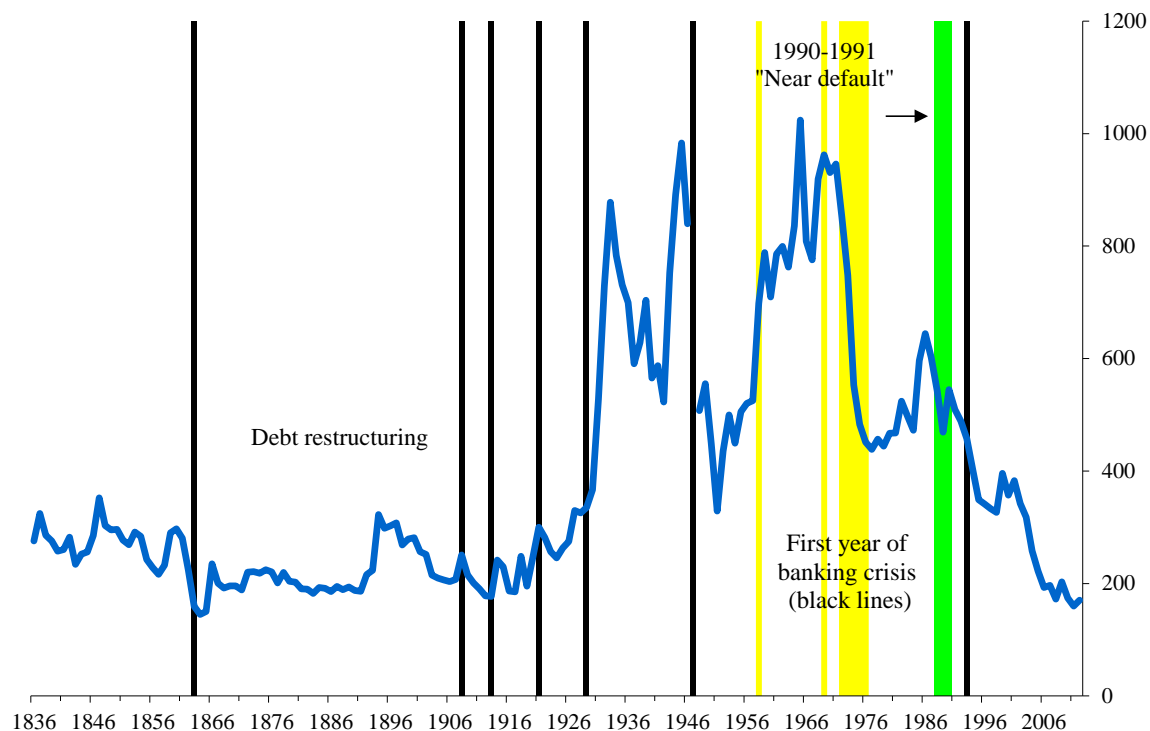
Sources: International Monetary Fund, World Economic Outlook, Reinhart and Rogoff (2009), Reinhart (2010), World Bank (2013), *International Debt Statistics*, Washington DC <http://data.worldbank.org/data-catalog/international-debt-statistics>, and World Bank, Quarterly External Debt Statistics, (QEDS), <http://web.worldbank.org/WBSITE/EXTERNAL/DATASTATISTICS/EXTDECQEDS/0,,menuPK:1805431~pagePK:64168427~piPK:64168435~theSitePK:1805415,00.html>

Figure 3. China: Domestic Credit, Default and Banking Crises, 1978-2013Q2
(end-of-period as a percent of GDP)



Sources: International Monetary Fund, *International Financial Statistics*, Reinhart and Rogoff (2009) and sources cited therein.

Figure 4. India: Central Government (domestic plus external) Debt, Restructuring, Near-default, and Banking Crises, 1835-2012 (as a percent of exports)



Sources: International Monetary Fund, World Economic Outlook, Reinhart and Rogoff (2009), Reinhart (2010), World Bank (2013), *International Debt Statistics*, Washington DC <http://data.worldbank.org/data-catalog/international-debt-statistics>. See additional sources listed in Figure x.

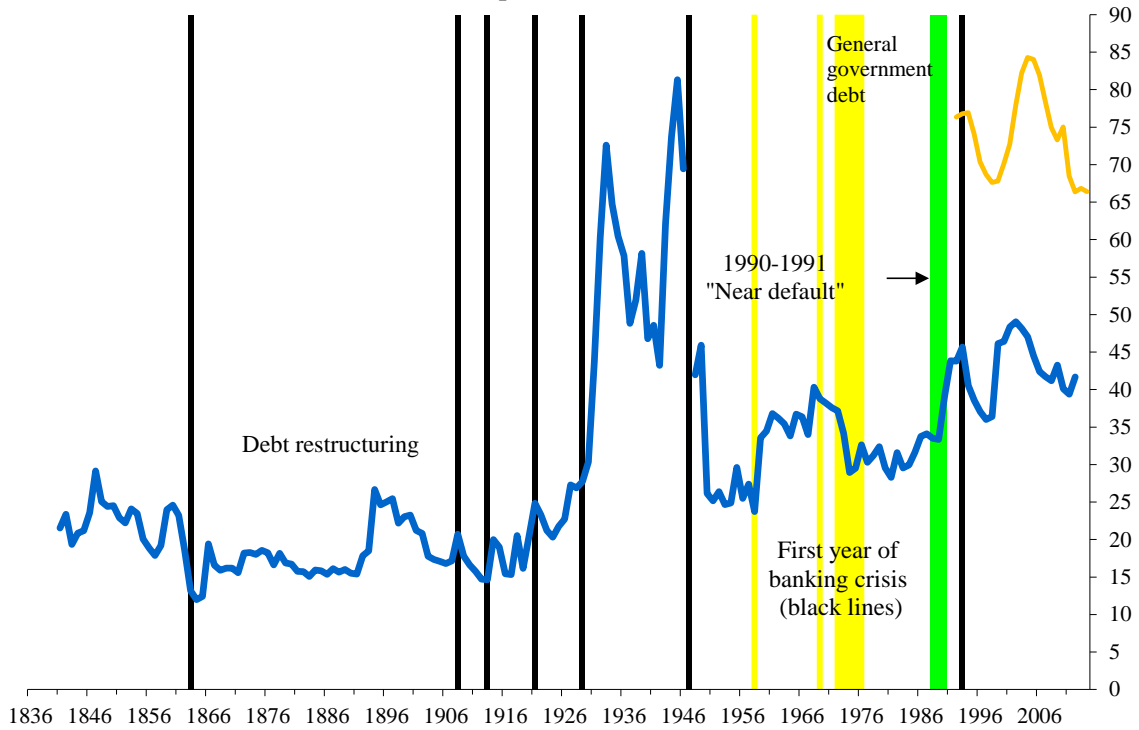
Default, Restructuring, Banking Crises, Growth Collapses and IMF Programs:
India, 1835-2012

(calculations since independence—1947--reported)

External default/restructuring	Duration (in years)	Domestic default/restructuring	Banking crisis (first year)	Hyper-inflation dates	Share of years in external default	Share of years in inflation crisis	5 worst output collapses year(decline)
1958	1	n.a.	1863	n.a.	11.1	3.2	1891(9.2)
1969	1		1908				1899(7.8)
1972-1976	5		1914				1918(12.8)
<i>1989-1990</i>			1921				1920(7.9)
Number of episodes:			1929				1947(17.2)
			1947				
			1993				
3		0	7	0			
Memorandum item on IMF programs, 1952-2009							
Dates of programs							Total
1957, 1962-1963, 1965, 1981, 1991 (2)							7

Notes: Near default (*italics*) not counted in total.

Figure 5. India: Central and General Government (domestic plus external)
Debt Restructuring, Near-default, and Banking Crises, 1835-2013
(as a percent of GDP)



Sources: International Monetary Fund, World Economic Outlook, Reinhart and Rogoff (2009), Reinhart (2010), World Bank (2013), *International Debt Statistics*, Washington DC <http://data.worldbank.org/data-catalog/international-debt-statistics>.

Additional sources for debt, exports and GDP:

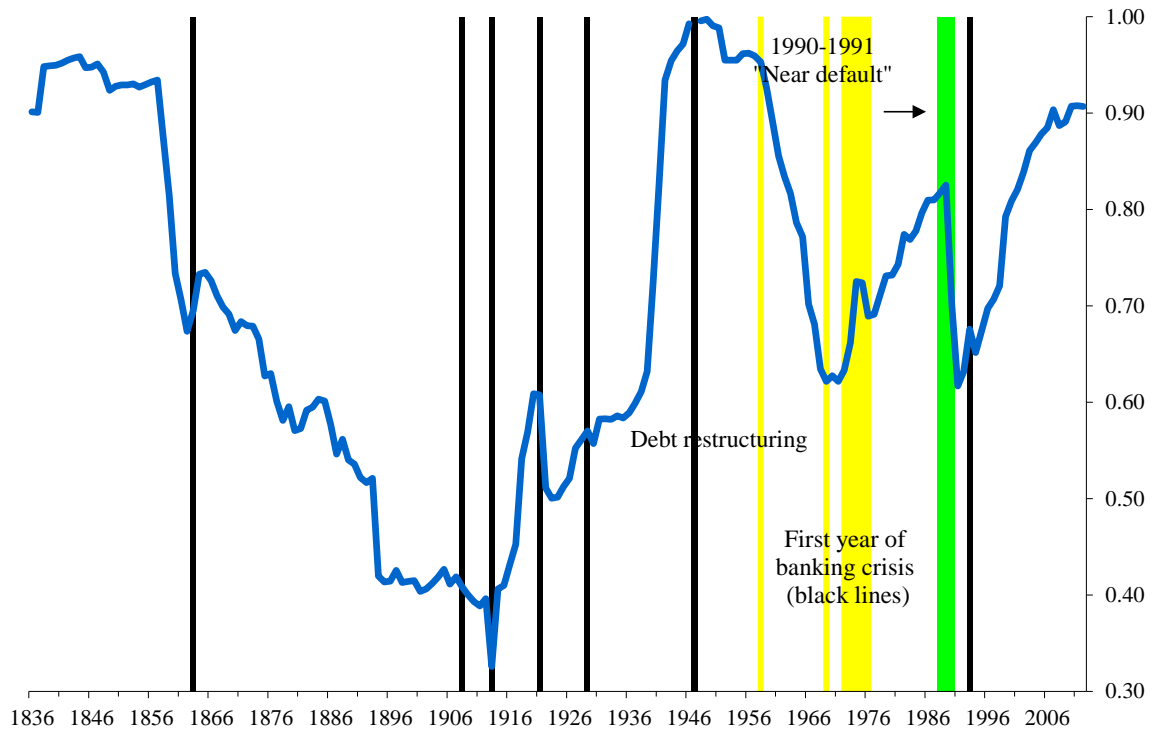
1835-1839, Source: *Brahmananda (2001)*

1840-1920, Source: *Statistical abstract relating to British India*

1913-1979 Sources: League of Nations (various issues) and United Nations (1948) and various issues.

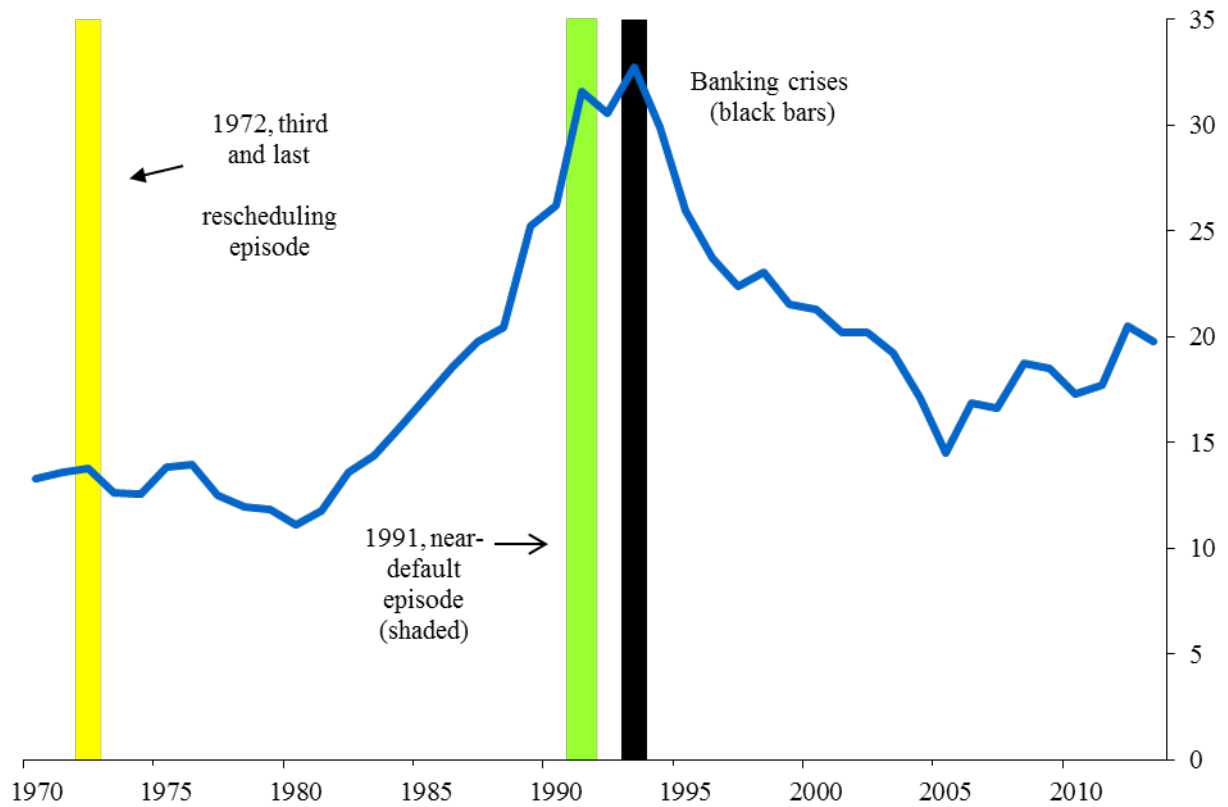
1980-2009 Sources: Jeanne and Guscina (through 1997) and Ministry of Finance

Figure 6. India: Share of Domestic Debt in Central Government Debt, 1835-2012



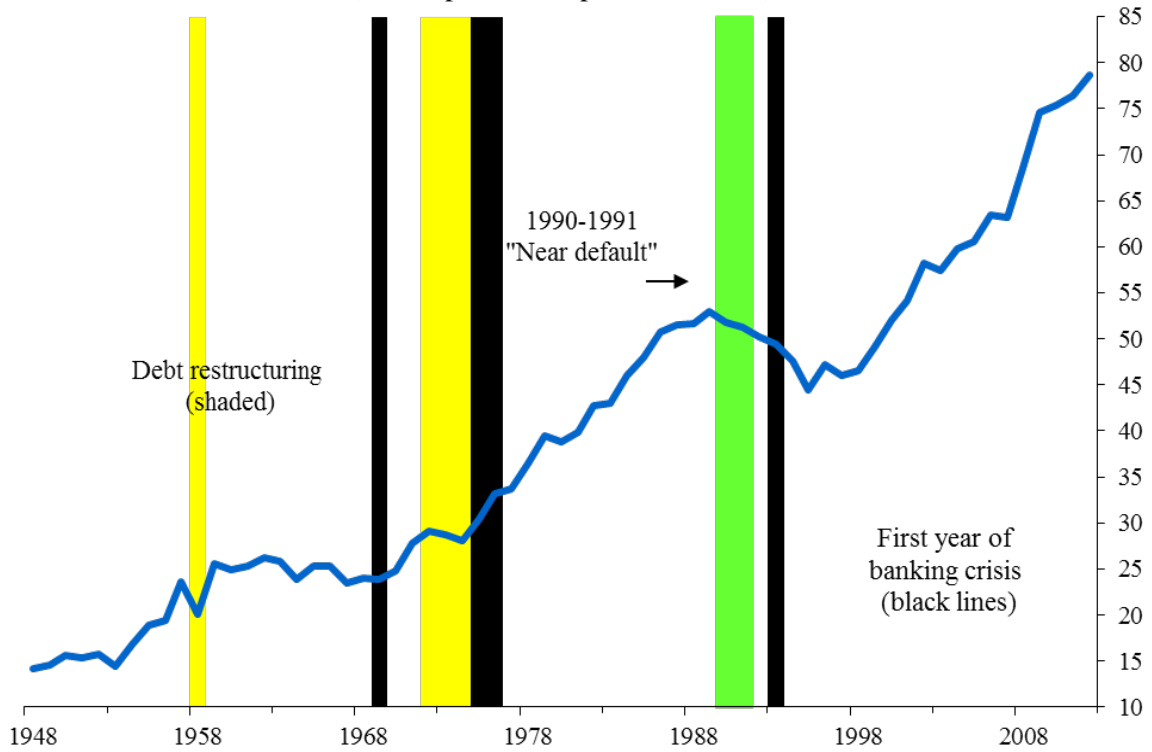
Sources: League of Nations, *Statistical Abstract*, various years, Reinhart and Rogoff (2009) and sources cited therein, Reinhart (2010), United Nations (1948), various issues.

Figure 7. India: External (public plus private) Debt, Restructuring, Near-default, and Banking Crises, 1970-2013Q1
(as a percent of GDP)



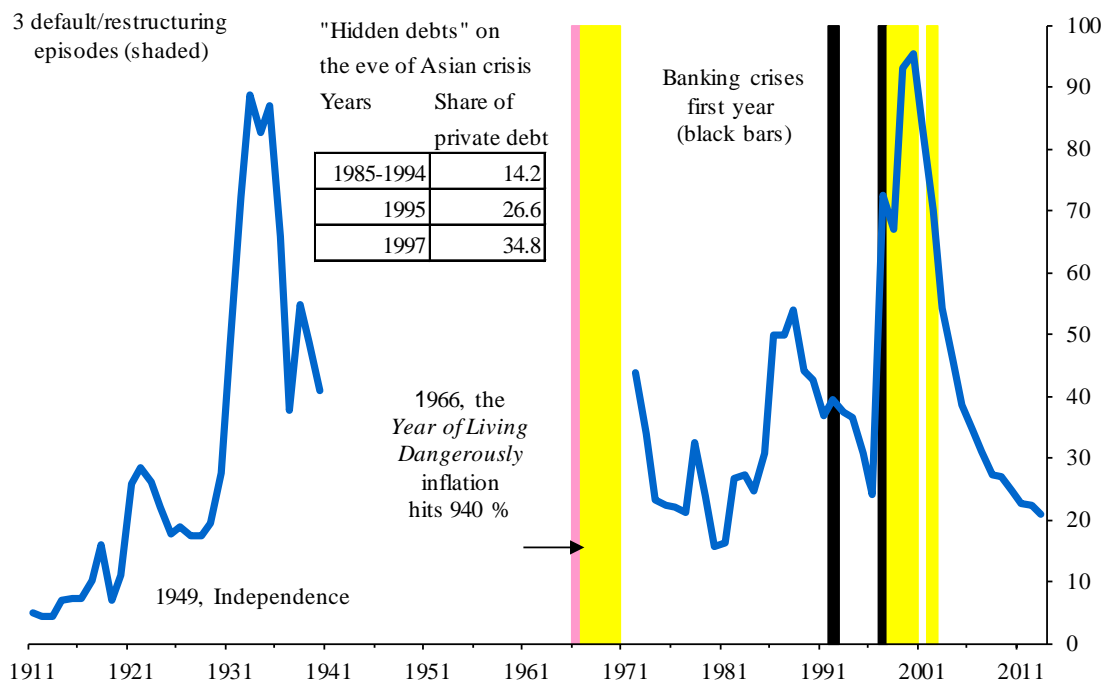
Sources: International Monetary Fund, World Economic Outlook, Reinhart and Rogoff (2009), Reinhart (2010), World Bank (2013), *International Debt Statistics*, Washington DC <http://data.worldbank.org/data-catalog/international-debt-statistics>, and World Bank, Quarterly External Debt Statistics, (QEDS), <http://web.worldbank.org/WBSITE/EXTERNAL/DATASTATISTICS/EXTDECQEDS/0,,menuPK:1805431~pagePK:64168427~piPK:64168435~theSitePK:1805415,00.html>

Figure 8. India: Domestic Credit, Restructuring and Banking Crises, 1948-2013Q2
(end-of-period as a percent of GDP)



Sources: International Monetary Fund, *International Financial Statistics*, Reinhart and Rogoff (2009) and sources cited therein.

Figure 9. Indonesia: Central Government (domestic plus external) Debt, Default, and Banking Crises, 1911-2013Q2 (as a percent of GDP)



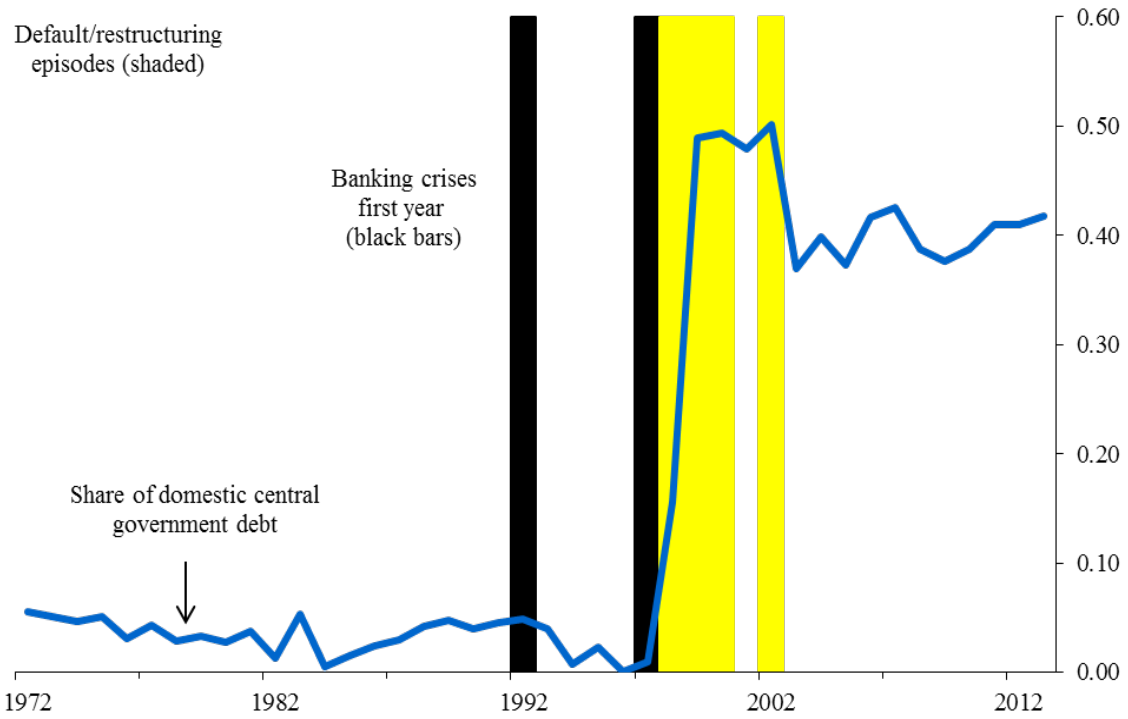
Sources: Creutzberg, P. (1976), Reinhart and Rogoff (2009) and sources cited therein

Default, Restructuring, Banking Crises, Growth Collapses, Hyperinflation and IMF Programs:
Indonesia, 1800-2012

(calculations since independence—1949--reported)

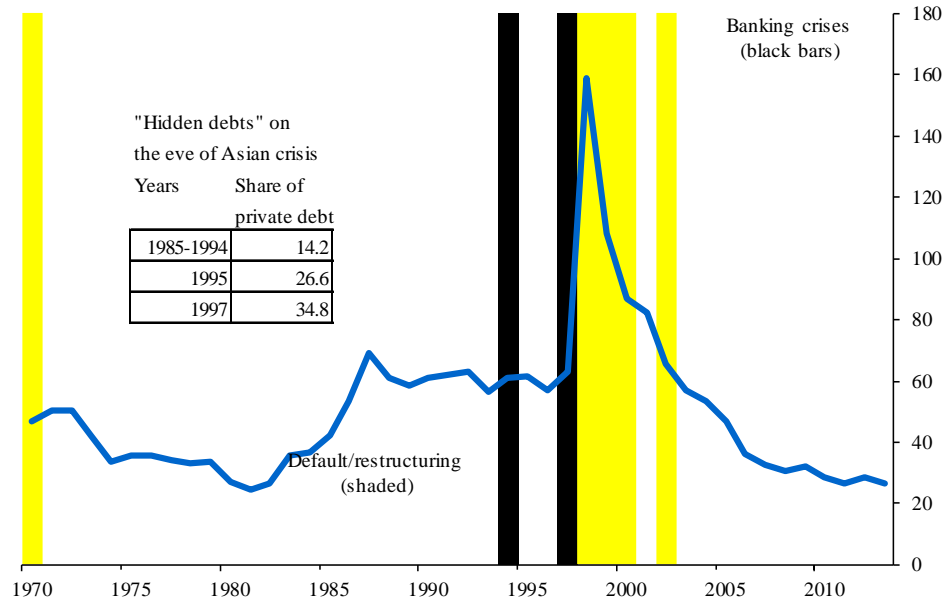
External default/restructuring	Duration (in years)	Domestic default/restructuring	Banking crisis (first year)	Hyper-inflation dates	Share of years in external default	Share of years in inflation crisis	5 worst output collapses year(decline)	
	1966-1970	5	n.a.	1992	1966	14.8	31.1	1931(7.1)
	1998-2000	3		1997				1958(4.7)
	2002	1						1963(4.2)
								1967(4.4)
								1998(13.1)
Number of episodes:								
	3	0	3	1				
Memorandum item on IMF programs, 1952-2012								
Dates of programs							Total	
1961, 1963, 1968-1973, 1997-1998, 2000							11	

Figure 10. Indonesia: Share of Domestic Debt in Total Central Government Debt, 1972-2013Q2



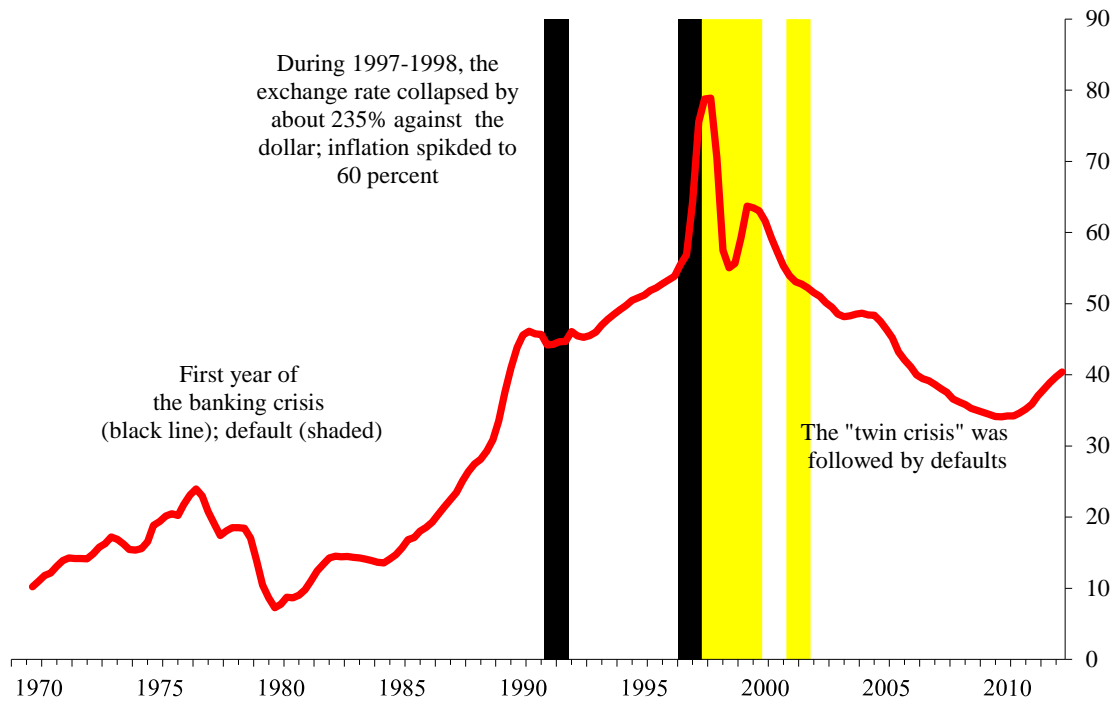
Sources: League of Nations, *Statistical Abstract*, various years, Reinhart and Rogoff (2009) and sources cited therein, Reinhart (2010), United Nations (1948), various issues.

Figure 11. Indonesia: External (public plus private) Debt, Restructuring, and Banking Crises, 1970-2013Q1 (as a percent of GDP)



Sources: International Monetary Fund, World Economic Outlook, Reinhart and Rogoff (2009), Reinhart (2010), World Bank (2013), *International Debt Statistics*, Washington DC <http://data.worldbank.org/data-catalog/international-debt-statistics>, and World Bank, Quarterly External Debt Statistics, (QEDS), <http://web.worldbank.org/WBSITE/EXTERNAL/DATASTATISTICS/EXTDECQEDS/0,,menuPK:1805431~pagePK:64168427~piPK:64168435~theSitePK:1805415,00.html>

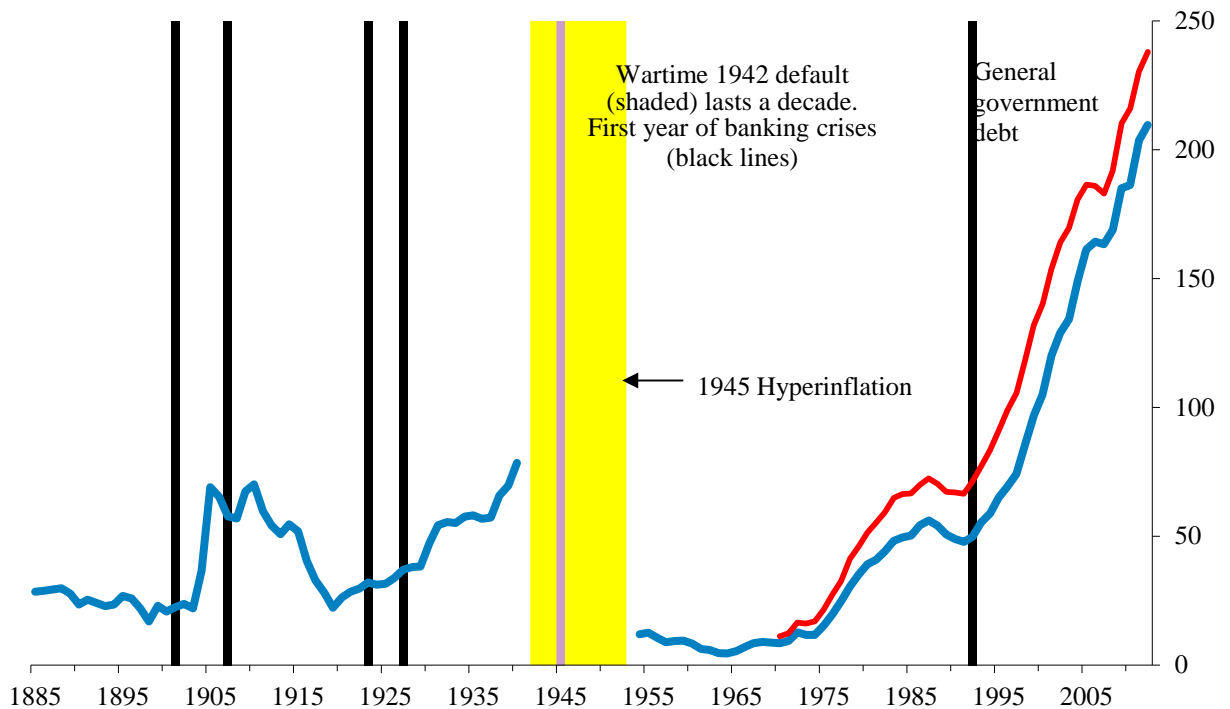
Figure 12. Indonesia: Domestic Credit, Restructuring and Banking Crises, 1970-2013Q2
(end-of-period as a percent of GDP, 4-quarter moving average)



Sources: International Monetary Fund, *International Financial Statistics*, Reinhart and Rogoff (2009) and sources cited therein.

Notes: For periods where no quarterly nominal GDP is available, a moving-average interpolation method is used.

Figure 13. Japan: Central and General Government (domestic plus external) Debt, Default, and Banking Crises, 1885-2012 (as a percent of GDP)

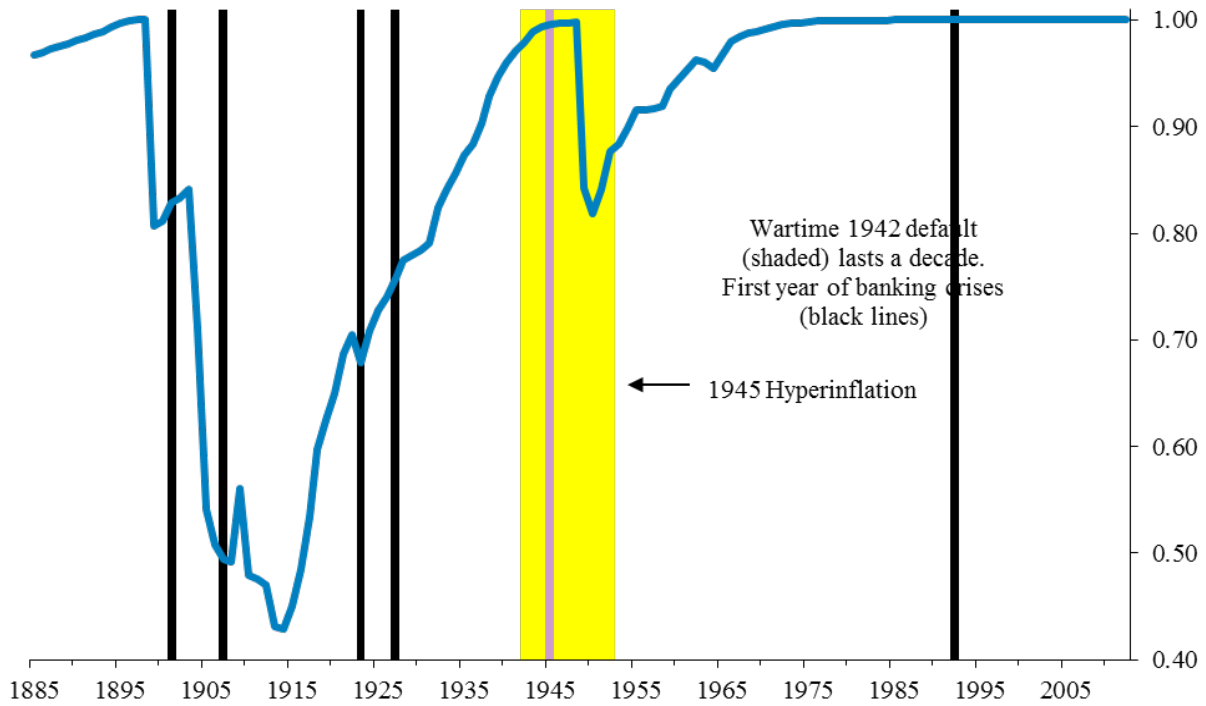


Sources: Financial Bureau, Ministry of Finance, Japan, League of Nations, *Statistical Abstract*, various years, Reinhart and Rogoff (2009) and sources cited therein, Reinhart (2010), United Nations (1948), *Yearbook*, various issues.

Default, Restructuring, Banking Crises, Growth Collapses and IMF Programs:
Japan, 1800-2012

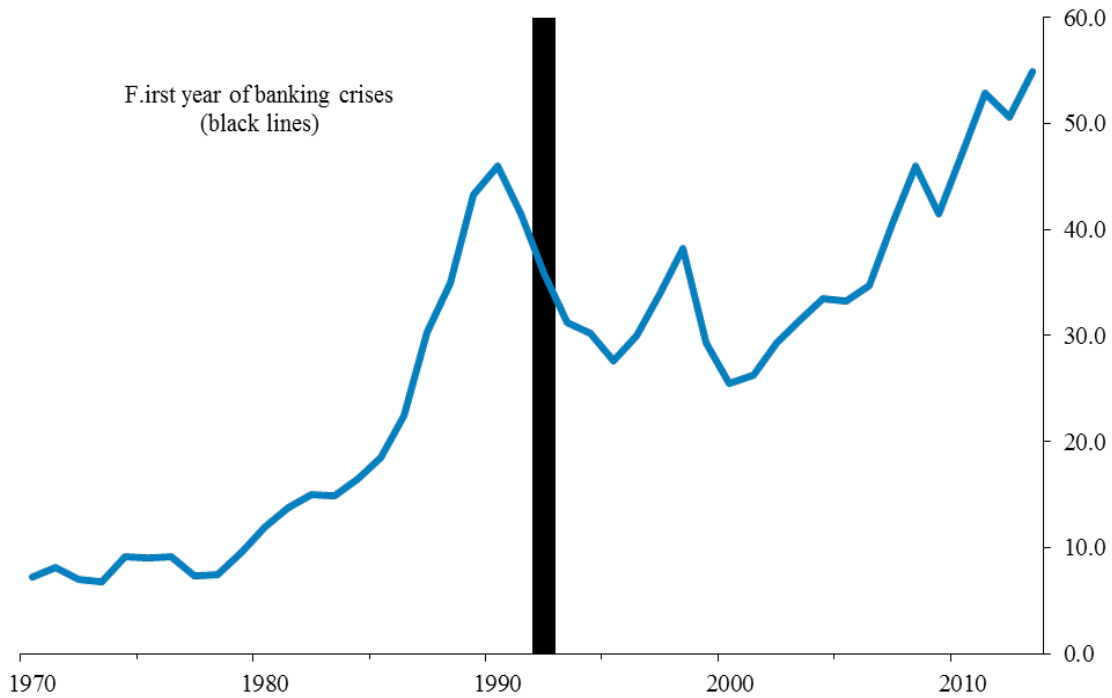
External default/restructuring	Duration (in years)	Domestic default/restructuring	Banking crisis (first year)	Hyper-inflation dates	Share of years in external default	Share of years in inflation crisis	5 worst output collapses year(decline)
1942-1952	11	1946-1948	1872 1882 1901 1907 1917 1923 1927 1992	1945	5.2	11.0	1896(5.5) 1899(7.4) 1920(6.2) 1930(7.3) 2009(5.5)
Number of episodes:							
1		1	8	1			
Memorandum item on IMF programs, 1952-2012							
Dates of programs 1962,1964							Total 2

Figure 14. Japan: Share of Domestic Debt in Total
Central Government Debt, 1875-2012



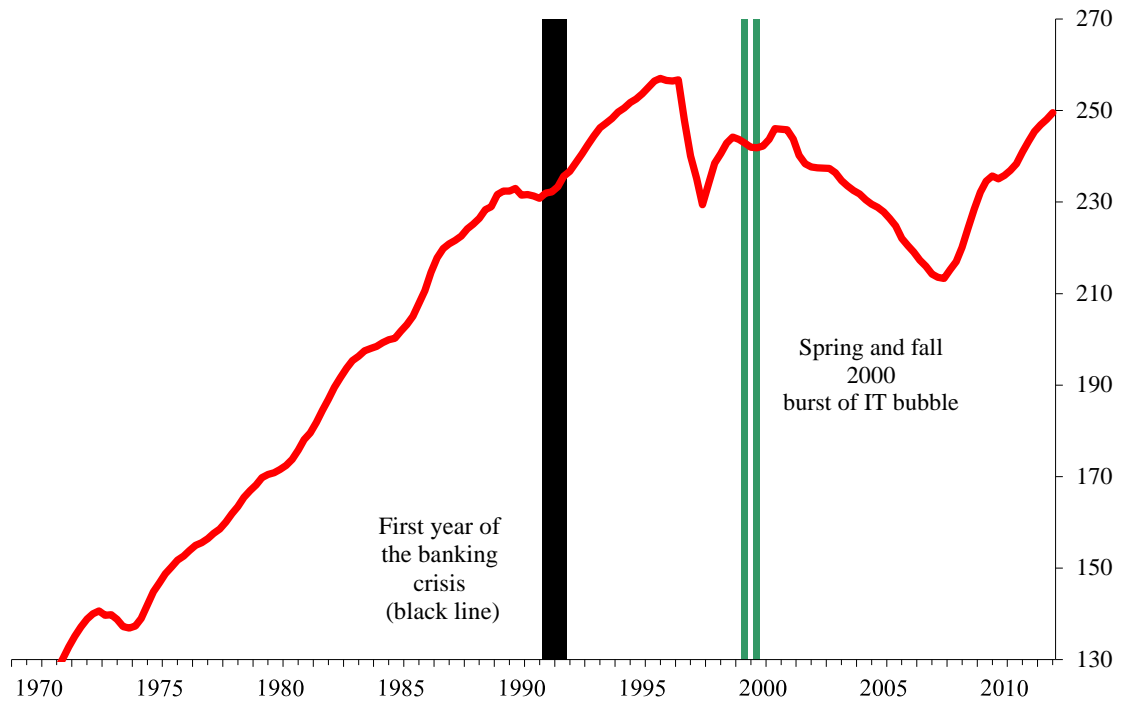
Sources: League of Nations, *Statistical Abstract*, various years, Reinhart and Rogoff (2009) and sources cited therein, Reinhart (2010), United Nations (1948), various issues.

Figure 15. Japan: Gross External (public plus private) Debt, and
Banking Crises, 1970-2013Q1
(as a percent of GDP)



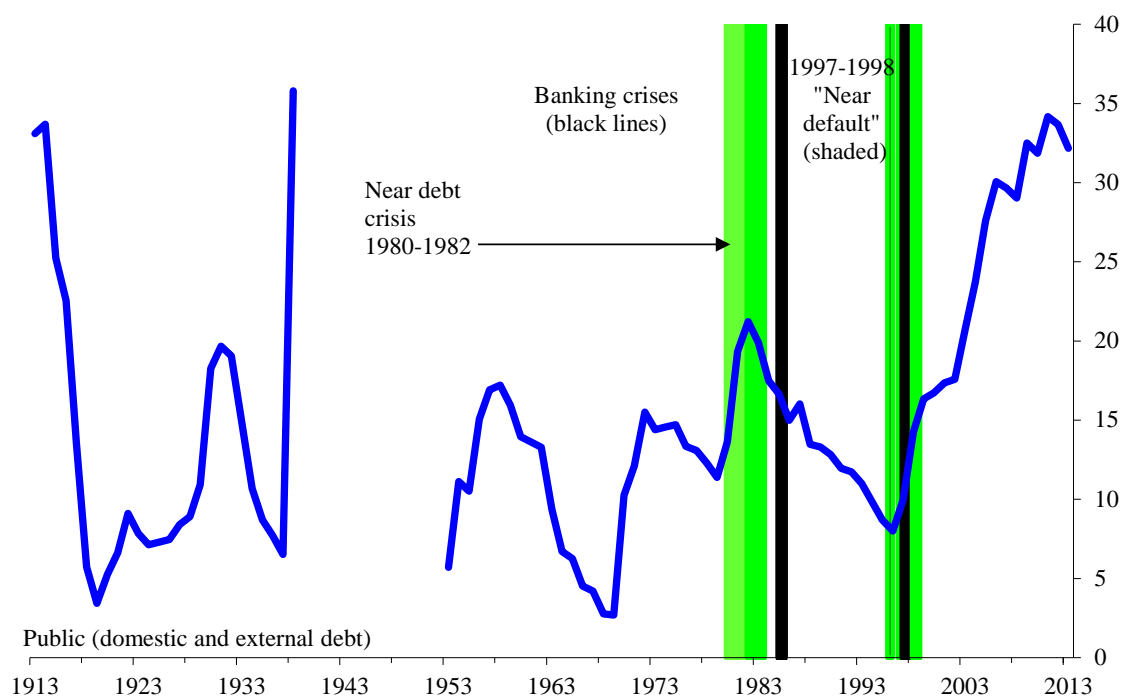
Sources: International Monetary Fund, *World Economic Outlook*, Lane and Milesi Ferretti (2010) Reinhart and Rogoff (2009), Reinhart (2010), World Bank (2013), Quarterly External Debt Statistics, (QEDS), <http://web.worldbank.org/WBSITE/EXTERNAL/DATASTATISTICS/EXTDECOEDS/0,,menuPK:1805431~pagePK:64168427~piPK:64168435~theSitePK:1805415,00.html>

Figure 16. Japan Banking Survey: Domestic Credit and Banking Crises, 1970-2013:Q2
(end-of-period as a percent of GDP, 4-quarter moving average)



Sources: International Monetary Fund, *International Financial Statistics*, Reinhart and Rogoff (2009) and sources cited therein.

Figure 17. Korea: Central Government (domestic plus external) Debt, Near-default, and Banking Crises, 1913-2013Q2 (as a percent of GDP)



Sources: Barrot (2013), Bassino and Van del Eng (2006), League of Nations, *Statistical Abstract*, various years, International Monetary Fund, SDDS, Mizoguchi and Umemura (1988), Reinhart and Rogoff (2009) and sources cited therein, Reinhart (2010), United Nations (1948), various issues.

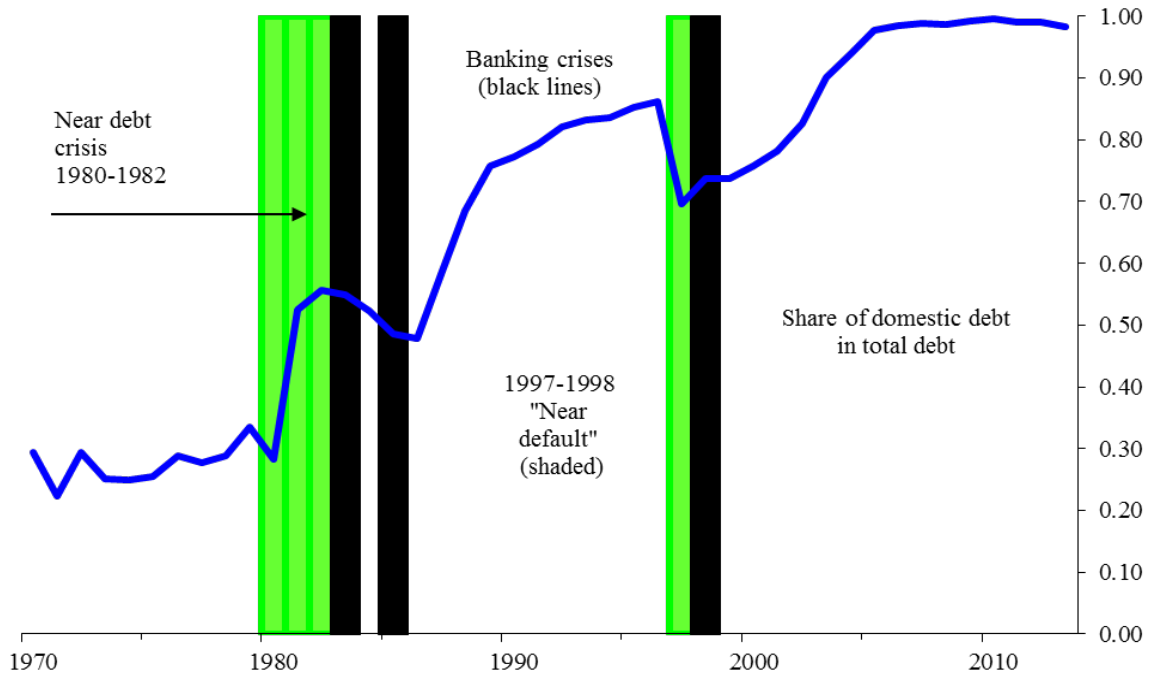
Default, Restructuring, Banking Crises, Growth Collapses and IMF Programs:
Korea, 1945-2012

External default/restructuring	Duration (in years)	Domestic default / restructuring	Banking crisis (first year)	Hyper-inflation dates	Share of years in external default	Share of years in inflation crisis	5 worst output collapses year(decline)
<i>1997-1998</i>	2		1983 1985 1997	n.a.	0.0	15.4	1920(12.3) 1922(7.1) 1939(10.4) 1951(7.7) 1998(6.9)
Number of episodes:							
0		0	3	0			
Memorandum item on IMF programs, 1952-2012							
Dates of programs							Total
1965-1975, 1977, 1980-1981, 1983, 1985, 1997							17

Notes: Near default (*italics*) not counted in total.

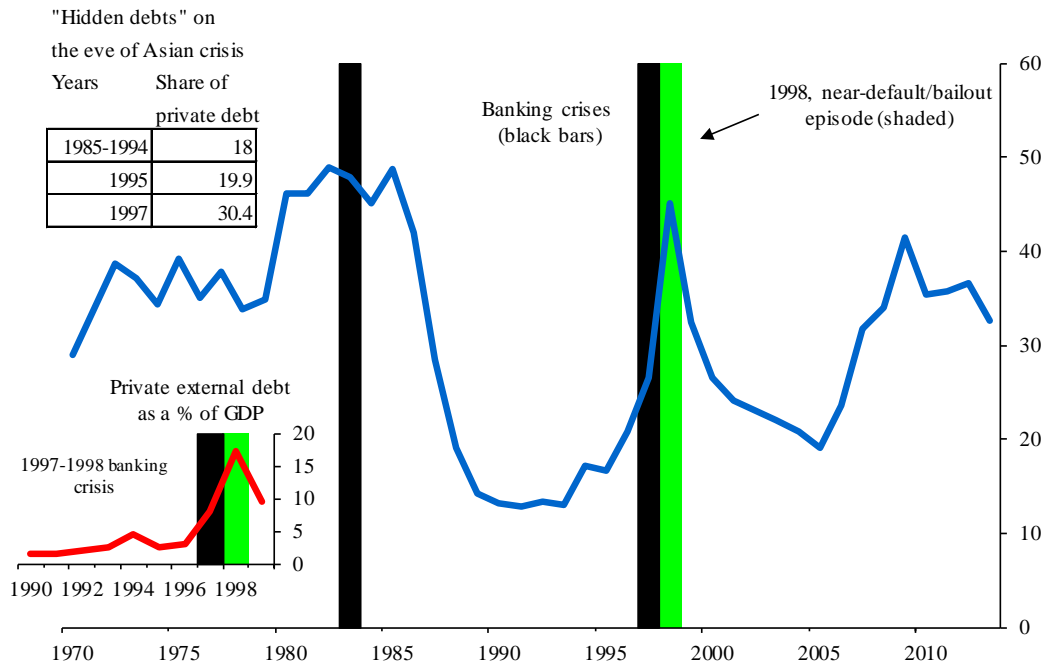
Sources: Pre-WWII real GDP, Bassino and van del Eng, (2006).

Figure 18. Korea: Share of Domestic Debt in Total Central Government Debt, 1970-2013Q2



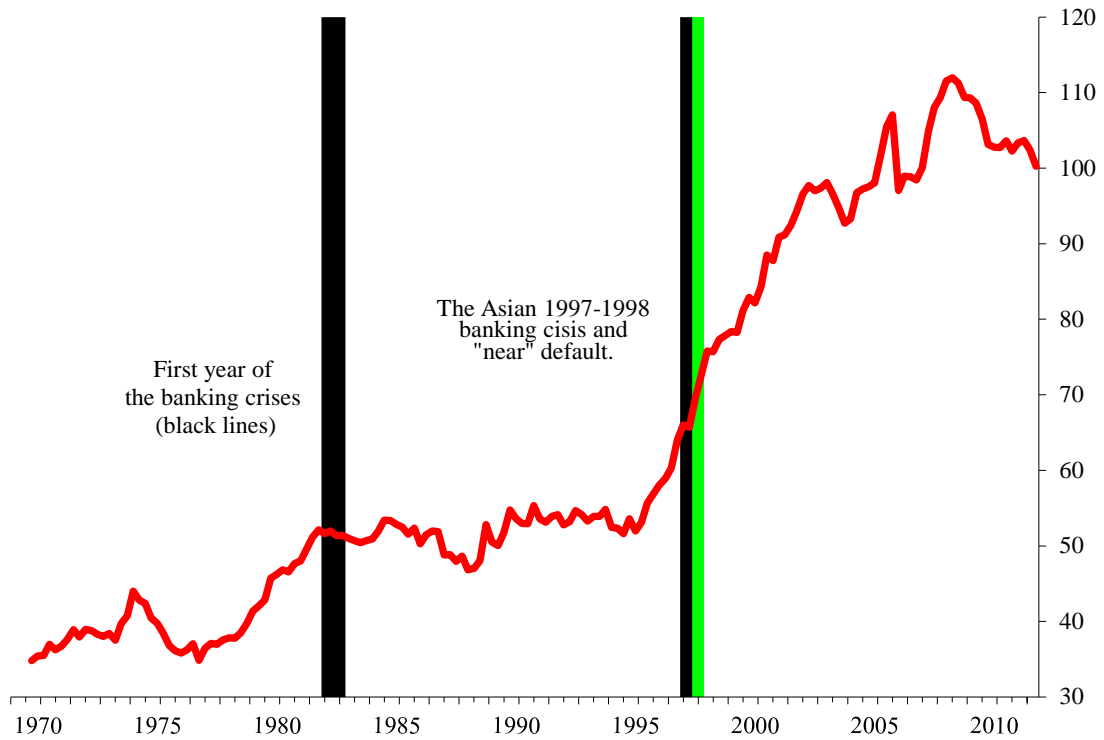
Sources: Barrot (2013), League of Nations, *Statistical Abstract*, various years, International Monetary Fund, SDDS, Reinhart and Rogoff (2009) and sources cited therein, Reinhart (2010), United Nations (1948), various issues.

Figure 19. Korea: External (public plus private) Debt, Near-default, and Banking Crises, 1970-2013Q1 (as a percent of GDP)



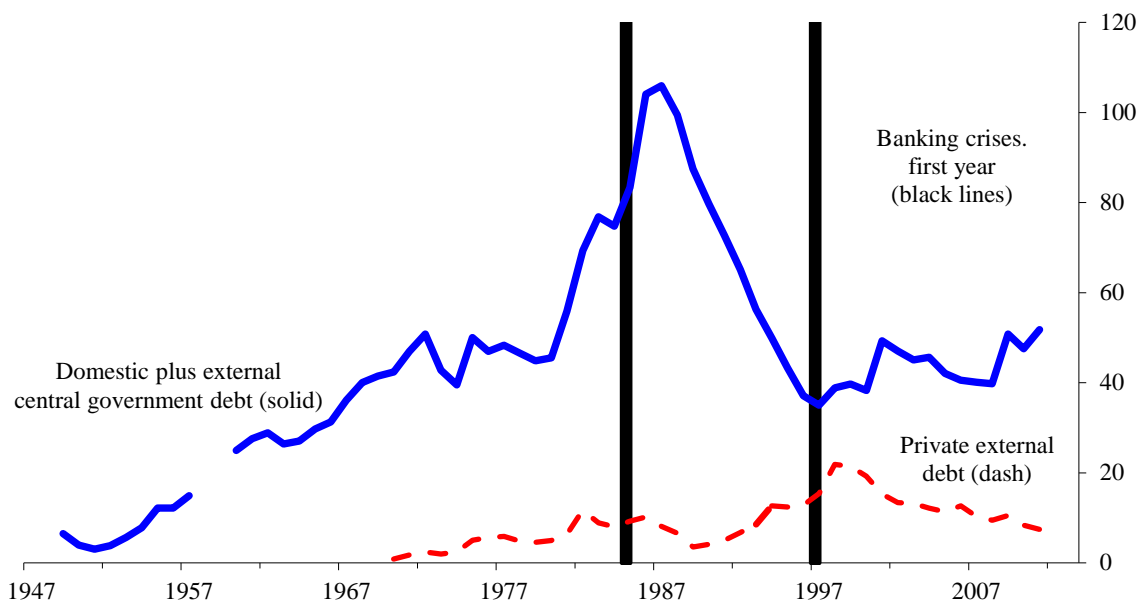
Sources: Reinhart and Rogoff (2009) and sources cited therein

Figure 20. Korea: Domestic Credit and Banking Crises, 1970-2012
(end-of-period as a percent of GDP)



Sources: International Monetary Fund, *International Financial Statistics*, Reinhart and Rogoff (2009) and sources cited therein.

Figure 21. Malaysia: Central Government (domestic plus external) Debt, and Banking Crises, 1947-2013Q2 (as a percent of GDP)

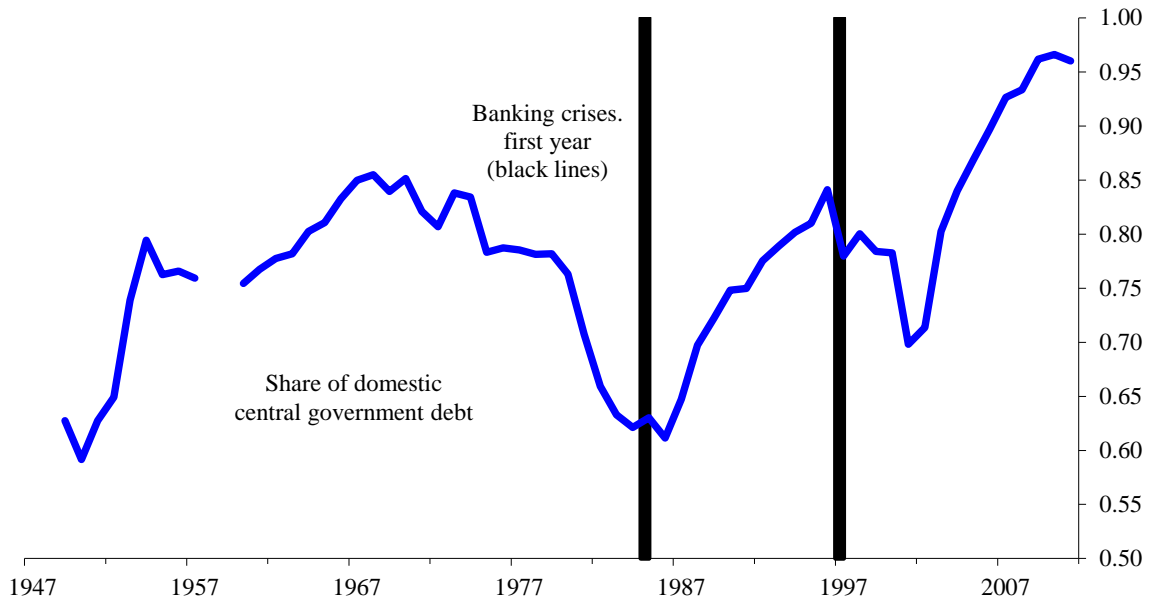


Sources: Barrot (2013), Bassino and Van del Eng (2006), League of Nations, *Statistical Abstract*, various years, International Monetary Fund, SDDS, Reinhart and Rogoff (2009) and sources cited therein, Reinhart (2010), United Nations (1948), various issues.

Default, Restructuring, Banking Crises, Growth Collapses and IMF Programs:
Malaysia, 1910-2012

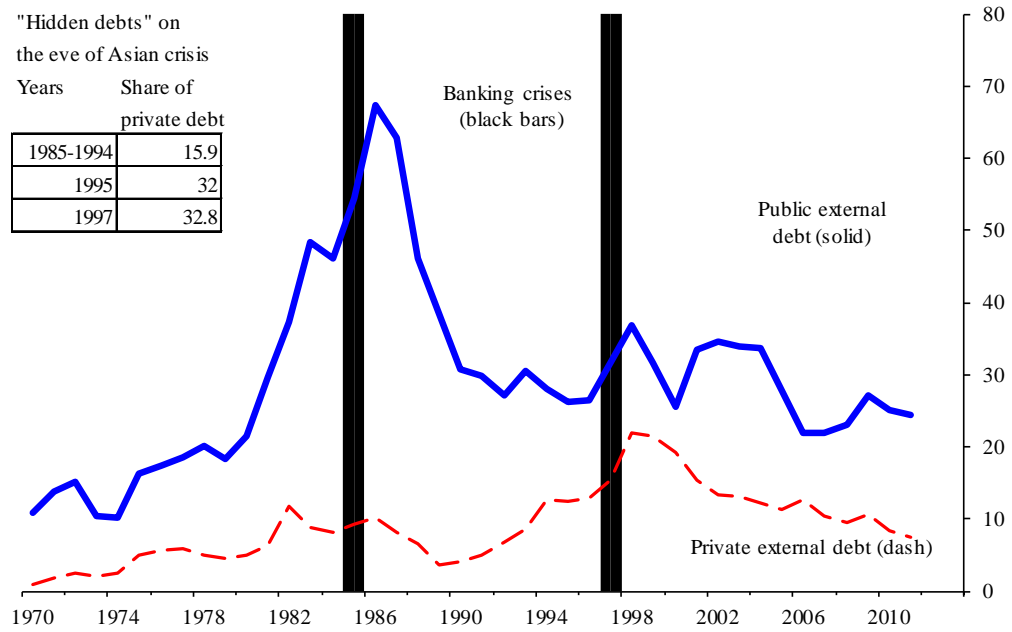
External default/restructuring	Duration (in years)	Domestic default/restructuring	Banking crisis (first year)	Hyper-inflation dates	Share of years in external default	Share of years in inflation crisis	5 worst output collapses year(decline)
n.a.	n.a.	n.a.	1985 1997	n.a.	0.0	0.0	1912(7.2) 1925(12.4) 1938(4.9) 1951(5.5) 1998(7.4)
Number of episodes:							
0		0	2	0			
Memorandum item on IMF programs, 1952-2012							Total
Dates of programs							0
None							0

Figure 22. Malaysia: Share of Domestic Debt in Total Public Debt, 1947-2013Q2



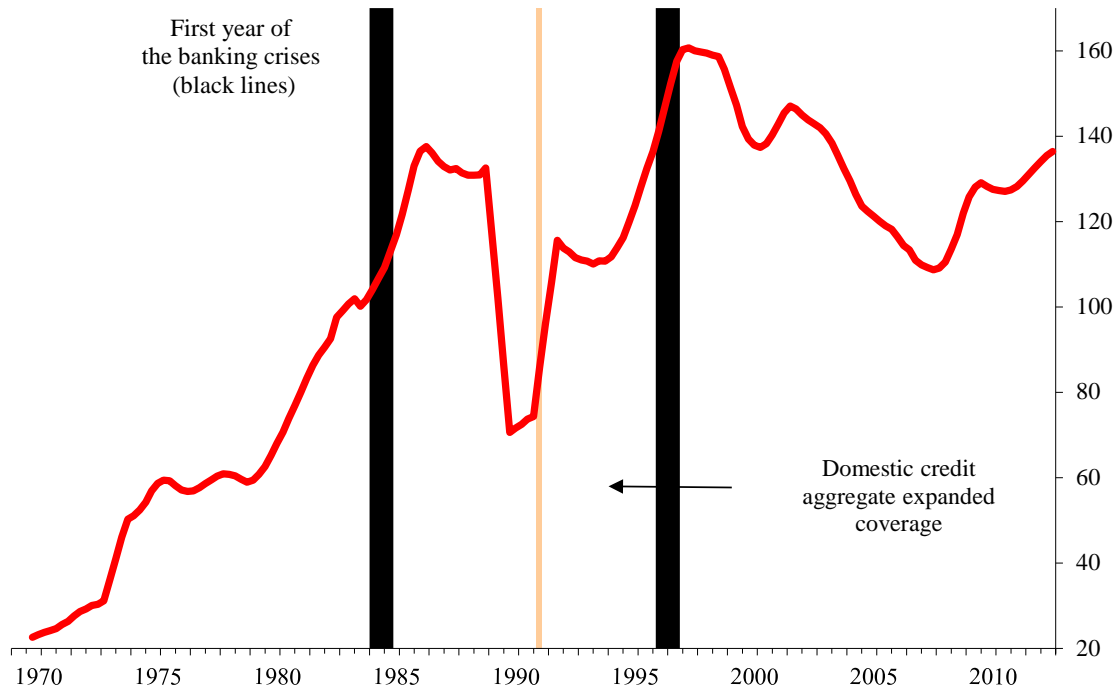
Sources: Barrot (2013), League of Nations, *Statistical Abstract*, various years, International Monetary Fund, SDDS, Reinhart and Rogoff (2009) and sources cited therein, Reinhart (2010), United Nations (1948), various issues.

Figure 23. Malaysia: External (public plus private) Debt, and Banking Crises, 1970-2011 (debt as a percent of GDP)



Sources: Reinhart and Rogoff (2009), Reinhart (2010), World Bank (2013), *International Debt Statistics*, Washington DC <http://data.worldbank.org/data-catalog/international-debt-statistics>.

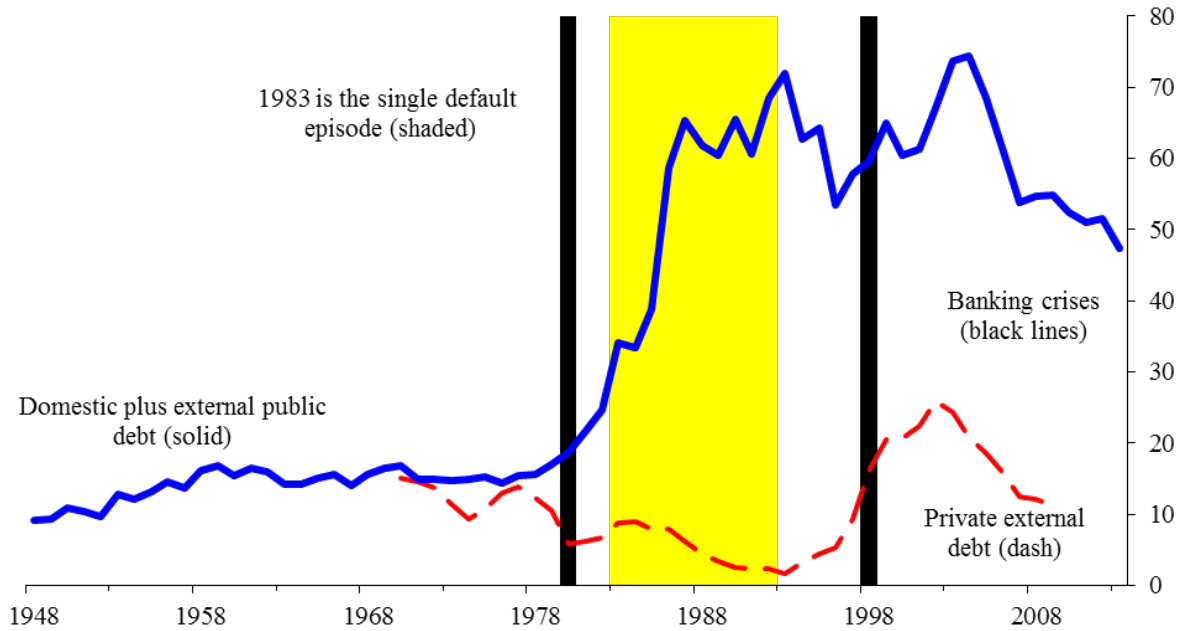
Figure 24. Malaysia: Domestic Credit, Default and Banking Crises, 1970-2012
(end-of-period as a percent of GDP, 4-quarter moving average)



Sources: International Monetary Fund, *International Financial Statistics*, Reinhart and Rogoff (2009) and sources cited therein.

Notes: For periods where no quarterly nominal GDP is available, a moving-average interpolation method is used.

Figure 25. Philippines: Central Government (domestic plus external) Debt, Default, and Banking Crises, 1948-2013Q2 (debt as a percent of GDP)



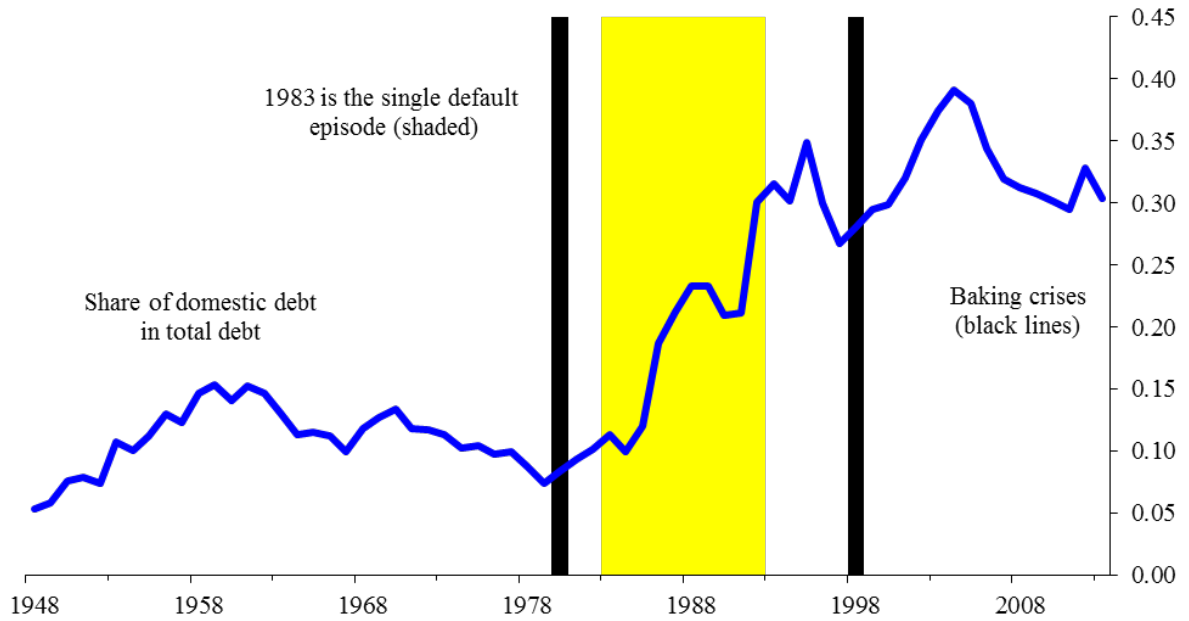
Sources: Reinhart and Rogoff (2009) and sources cited therein

Default, Restructuring, Banking Crises, Growth Collapses and IMF Programs:
Philippines, 1946-2012

External default/restructuring	Duration (in years)	Domestic default/restructuring	Banking crisis (first year)	Hyper-inflation dates	Share of years in external default	Share of years in inflation crisis	5 worst output collapses year(decline)
1983-1992	10	n.a.	1981 1997	n.a.	18.8	6.3	1904(13.9) 1923(6.1) 1935(6.8) 1984(7.3) 1985(7.3)
Number of episodes:							
1		0	2	0			
Memorandum item on IMF programs, 1952-2012							Total
Dates of programs 1962-1968, 1970-1976, 1979-1980, 1983-1984, 1986, 1989, 1991, 1994, 1998							23

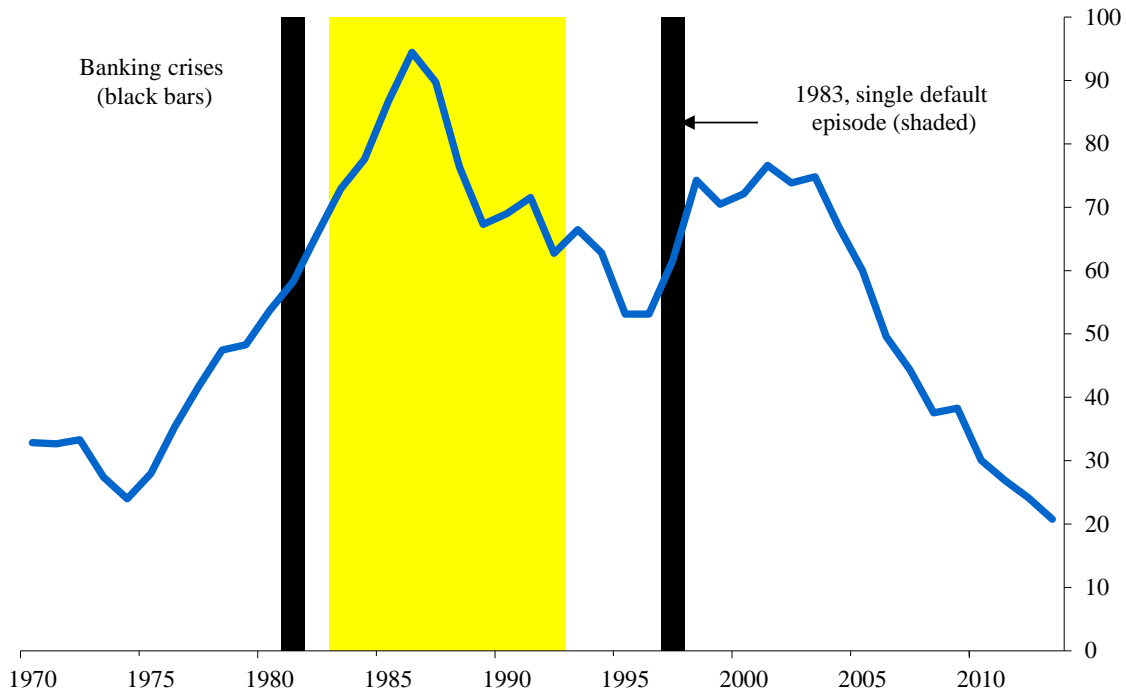
Sources: Pre-WWII real GDP, Bassino and van del Eng, (2006).

Figure 26. Philippines: Share of Domestic Debt in Total Public Debt, 1970-2013Q2



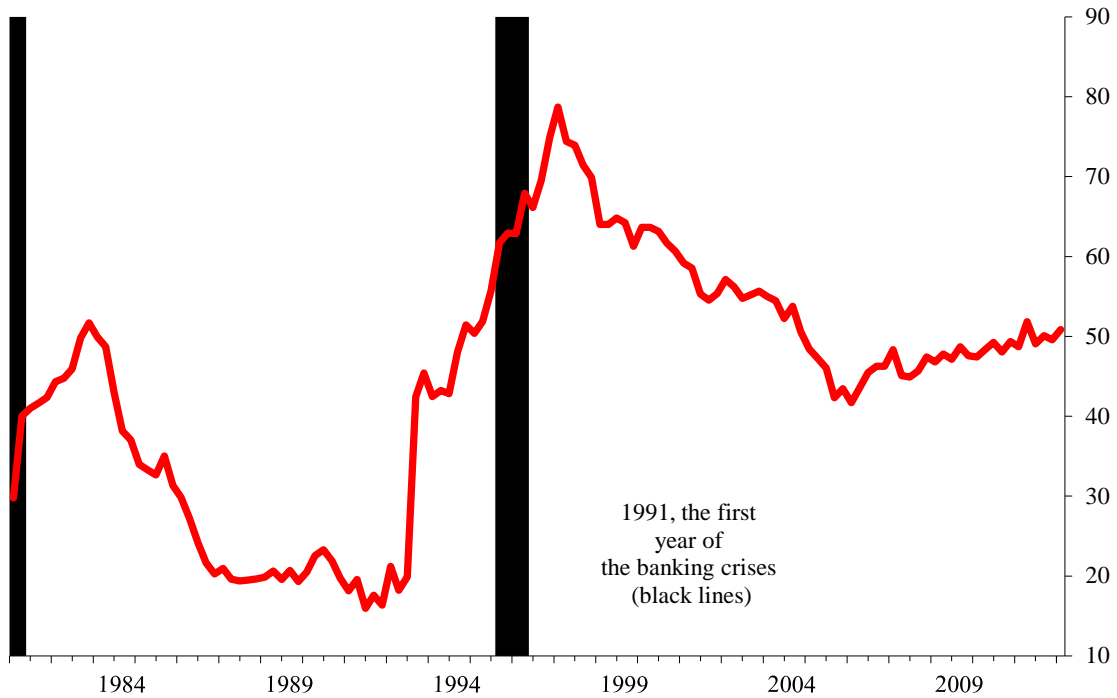
Sources: League of Nations, *Statistical Abstract*, various years, Reinhart and Rogoff (2009) and sources cited therein, Reinhart (2010), United Nations (1948), various issues.

Figure 27. Philippines: External Debt (Public and Private), Default, and Banking Crises, 1970-2013Q1
(debt as a percent of GDP)



Sources: International Monetary Fund, World Economic Outlook, Reinhart and Rogoff (2009), Reinhart (2010), World Bank (2013), *International Debt Statistics*, Washington DC <http://data.worldbank.org/data-catalog/international-debt-statistics>, and World Bank, Quarterly External Debt Statistics, (QEDS), <http://web.worldbank.org/WBSITE/EXTERNAL/DATASTATISTICS/EXTDECQEDS/0,,menuPK:1805431~pagePK:64168427~piPK:64168435~theSitePK:1805415,00.html>

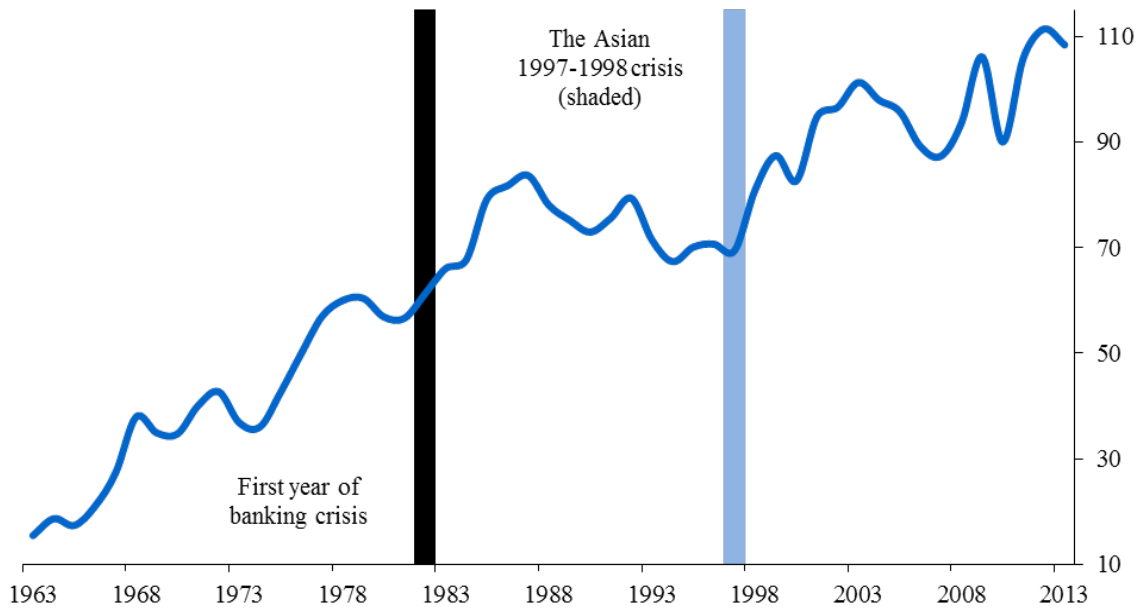
Figure 28. Philippines: Domestic Credit, Default
and Banking Crises, 1980-2012
(end-of-period as a percent of GDP, 4-quarter moving average)



Sources: International Monetary Fund, *International Financial Statistics*, Reinhart and Rogoff (2009) and sources cited therein.

Notes: For periods where no quarterly nominal GDP is available, a moving-average interpolation method is used.

Figure 29. Singapore: Central Government (domestic and external) Debt, Default, and Banking Crises, 1963-2013Q2 (debt as a percent of GDP)



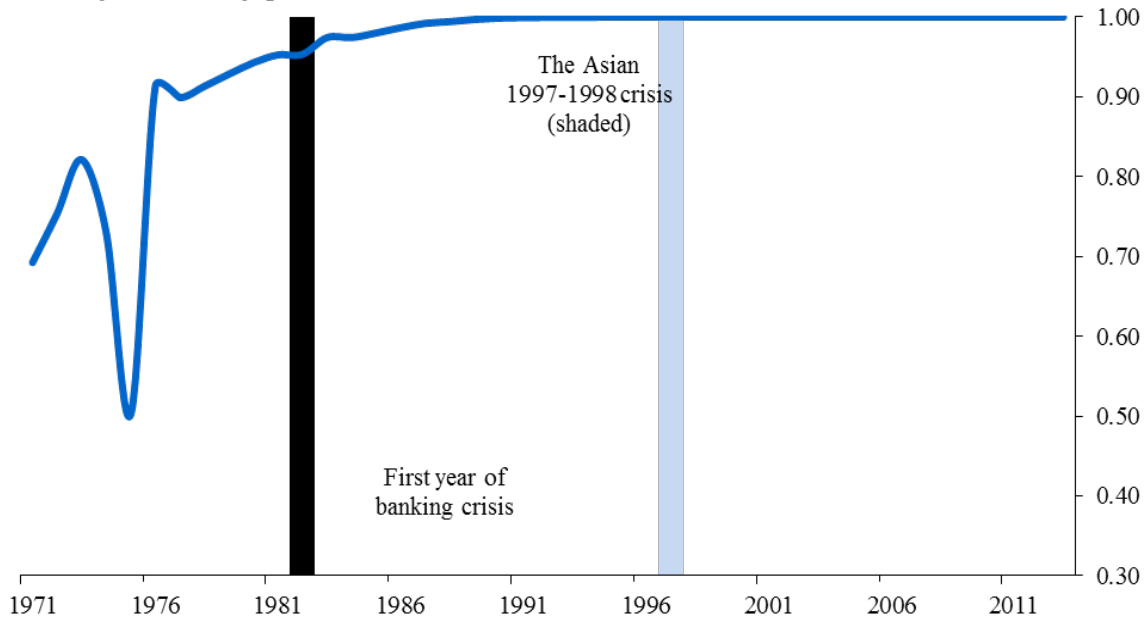
Sources: Barrot (2013), League of Nations, *Statistical Abstract*, various years, International Monetary Fund, SDDS, Reinhart and Rogoff (2009) and sources cited therein, Reinhart (2010), United Nations (1948), various issues.

Notes: Since the mid-1990s all public debts of the central government are domestic.

Default, Restructuring, Banking Crises, Growth Collapses, and IMF Programs:
Singapore, 1965-2012

External default/restructuring	Duration (in years)	Domestic default/restructuring	Banking crisis dates (first year)	Hyper-inflation dates	Share of years in external default	Share of years in inflation crisis	3 worst output collapses year(decline)
n.a.	n.a.	n.a.	1982	n.a.	0.0	2.2	1964(3.5) 2001(2.4) 2009(0.8)
Number of episodes:		0	1	0			
Memorandum item on IMF programs, 1952-2009							Total number of years
Dates of programs							0
None							0

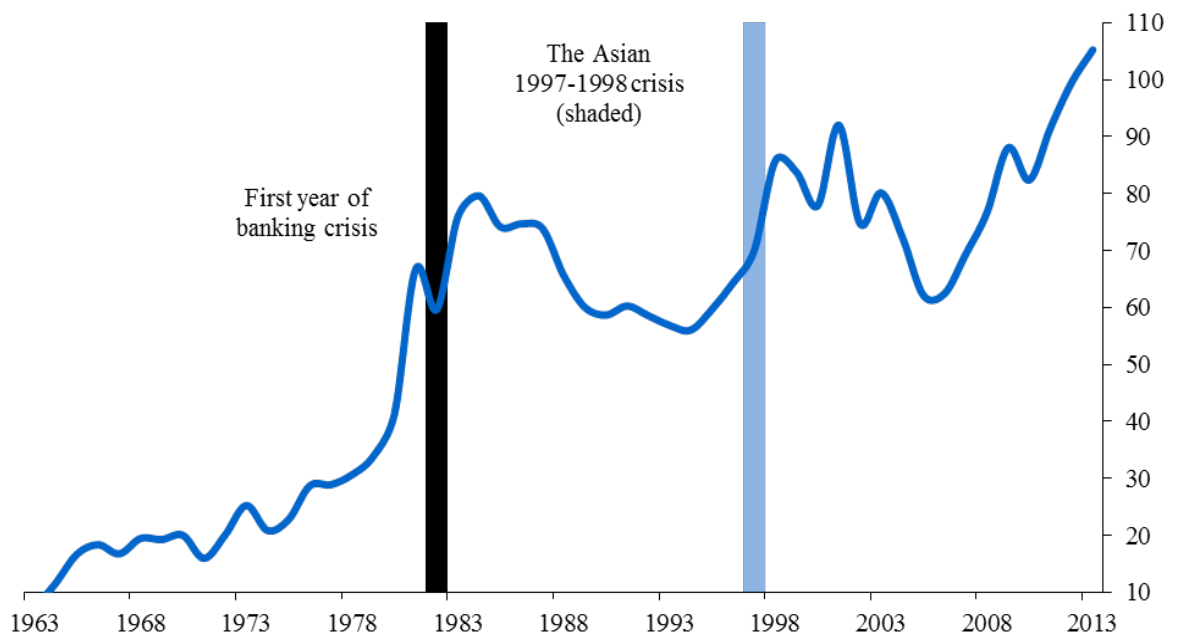
Figure 30. Singapore: Share of Domestic Debt in Total Public Debt, 1970-2013Q2



Sources: Barrot (2013), League of Nations, *Statistical Abstract*, various years, International Monetary Fund, SDDS, Reinhart and Rogoff (2009) and sources cited therein, Reinhart (2010), United Nations (1948), various issues.

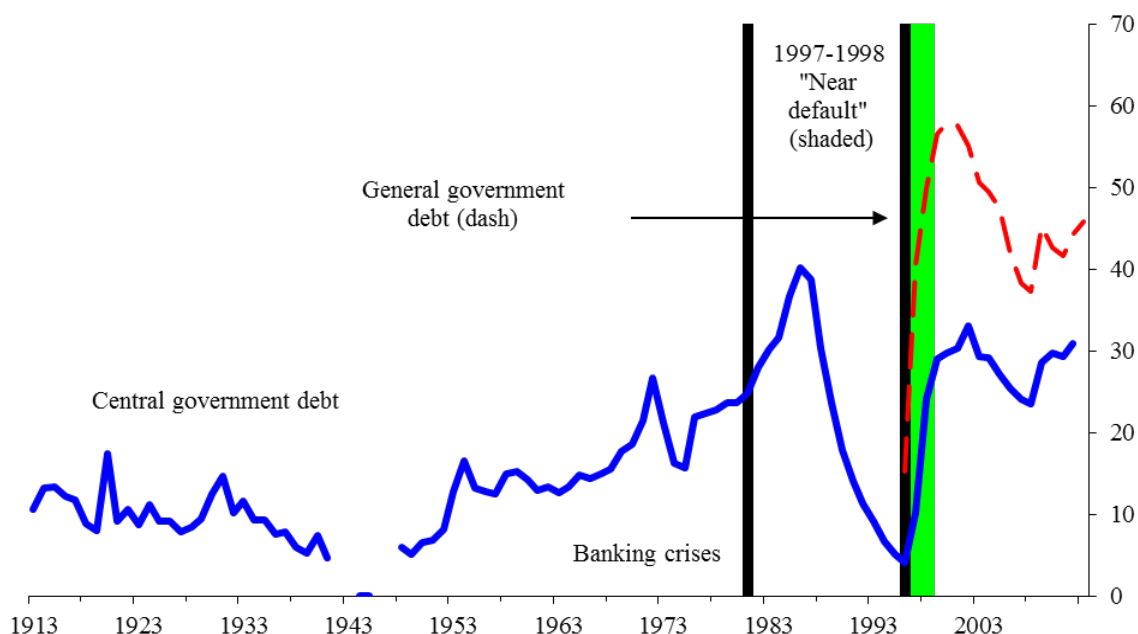
Notes: Since the mid-1990s all public debts of the central government are domestic.

Figure 31. Singapore: Domestic Credit, Default and Banking Crises, 1963-2013:Q2



Sources: International Monetary Fund, *International Financial Statistics*, Reinhart and Rogoff (2009) and sources cited therein.

Figure 32. Thailand: Central and General Government Debt, “Near-default”, and Banking Crises, 1913-2012 (debt as a percent of GDP)

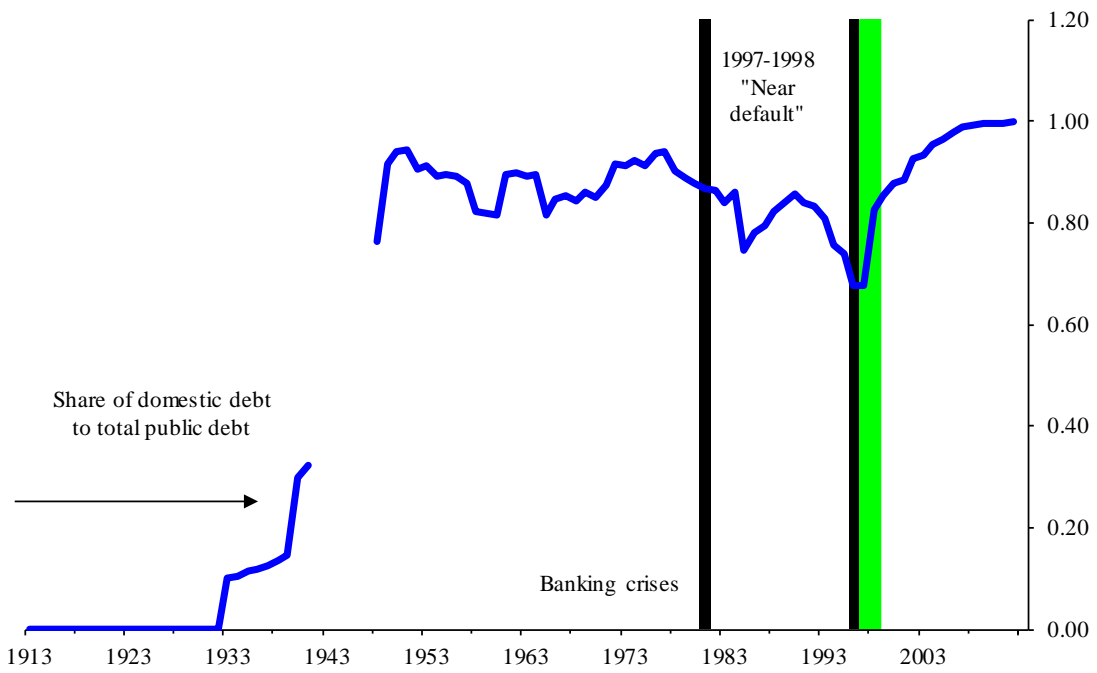


Sources: International Monetary Fund, *World Economic Outlook*, League of Nations, *Statistical Abstract*, various years, Reinhart and Rogoff (2009), Reinhart (2010), United Nations (1948), various issues.

Default, Restructuring, Banking Crises, Growth Collapses, and IMF Programs:
Thailand, 1800-2012

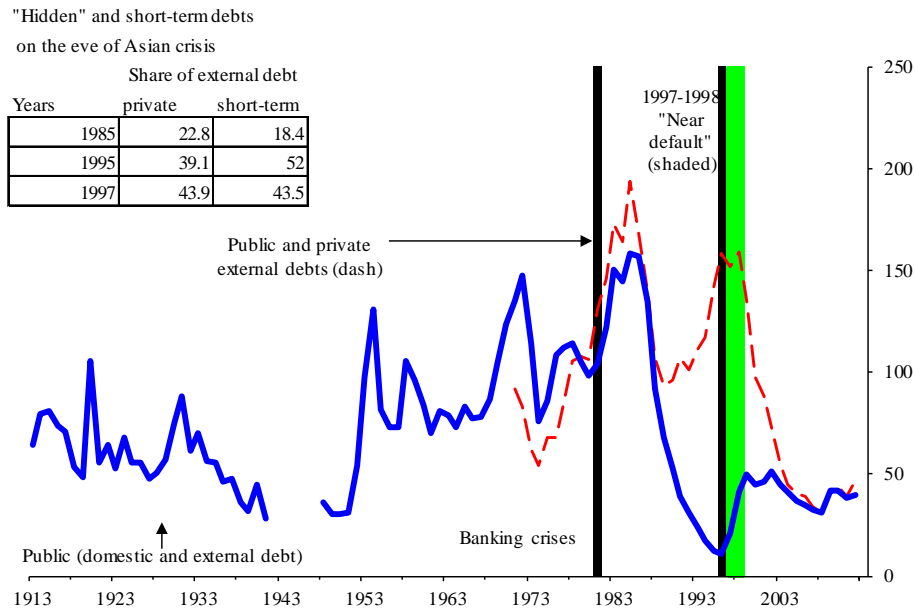
External default/restructuring	Duration (in years)	Domestic default/restructuring	Banking crisis (first year)	Hyper-inflation dates	Share of years in external default	Share of years in inflation crisis	5 worst output collapses year(decline)
1997-1998	“near” 2	n.a.	1983 1996	n.a.	0.0	9.0	1919(4.2) 1942(9.0) 1945(6.8) 1998(10.5) 2009(2.3)
Number of episodes:							
0		0	2	0			
Memorandum item on IMF programs, 1952-2009							Total number
Dates of programs 1978, 1981-1982, 1985, 1997							5

Figure 33. Thailand: Share of Domestic Debt in Total Public Debt, 1914-2012



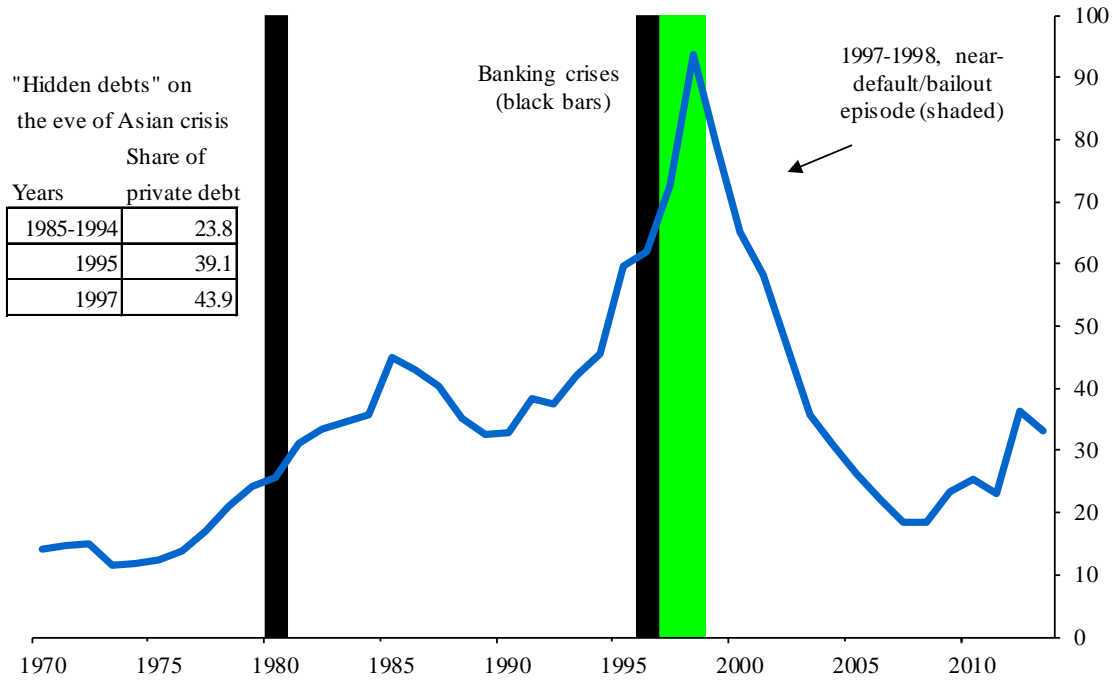
Sources: League of Nations, *Statistical Abstract*, various years, Reinhart and Rogoff (2009) and sources cited therein, Reinhart (2010), United Nations (1948), various issues.

Figure 34. Thailand: Public (domestic and external) and External (public and private) Debts, “Near-default”, and Banking Crises, 1913-2013:Q2 (debt as a percent of exports)



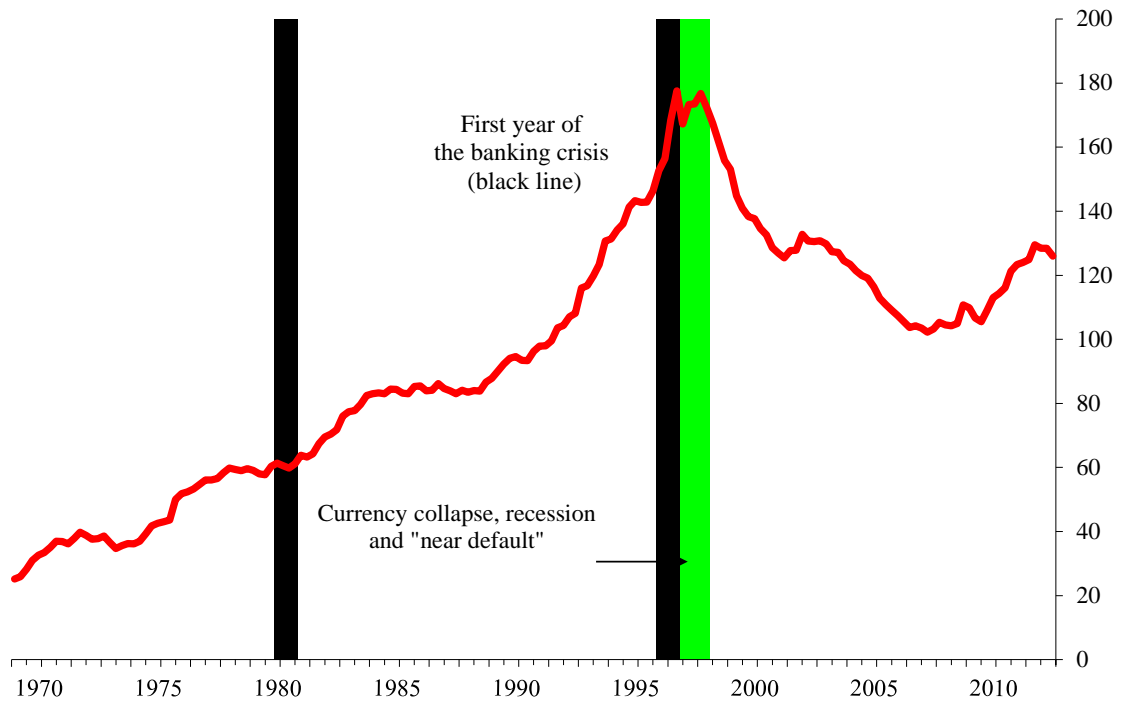
Sources: International Monetary Fund, *World Economic Outlook*, League of Nations, *Statistical Abstract*, various years, Reinhart and Rogoff (2009), Reinhart (2010), United Nations (1948), various issues, World Bank (2013), *International Debt Statistics*, Washington DC <http://data.worldbank.org/data-catalog/international-debt-statistics>, and World Bank, Quarterly External Debt Statistics, (QEDS), <http://web.worldbank.org/WBSITE/EXTERNAL/DATASTATISTICS/EXTDECQEDS/0,,menuPK:1805431~pagePK:64168427~piPK:64168435~theSitePK:1805415,00.html>

Figure 35. Thailand: External Debt (Public and Private), Default, and Banking Crises, 1970-2013Q1
(debt as a percent of GDP)



Sources: International Monetary Fund, *World Economic Outlook*, Reinhart and Rogoff (2009), Reinhart (2010), World Bank (2013), *International Debt Statistics*, Washington DC <http://data.worldbank.org/data-catalog/international-debt-statistics>, and World Bank, Quarterly External Debt Statistics, (QEDS), <http://web.worldbank.org/WBSITE/EXTERNAL/DATASTATISTICS/EXTDECQEDS/0,,menuPK:1805431~pagePK:64168427~piPK:64168435~theSitePK:1805415,00.html>

Figure 36. Thailand: Domestic Credit and Banking Crises, 1970-2013Q2
(end-of-period as a percent of GDP)



Sources: International Monetary Fund, *International Financial Statistics*, Reinhart and Rogoff (2009) and sources cited therein.

References

- Barrot, Diego (2013), "The Debt of the Nations: A New Database of Gross Government Debt, 1948-2011," World Bank, forthcoming.
- Bassino, Jean-Pascal, and Pierre van del Eng, (2006) "New Benchmark of Wages and GDP, 1913-1970, mimeograph Montpellier University, France, 20.
- Gold, Joseph (1970) *Stand-by arrangements of the International Monetary Fund*, (Washington D.C.: International Monetary Fund).
- International Monetary Fund, 2013, *International Financial Statistics*.
- International Monetary Fund, 2013, *Standard Data Dissemination System*.
<http://dsbb.imf.org/pages/sdds/home.aspx>
- International Monetary Fund, 2013. *World Economic Outlook*, April and October,
<http://www.imf.org/external/pubs/ft/weo/2013/01/weodata/index.aspx>
- Lane, Philip R. and Gian Maria Milesi-Ferretti (2010), "The External Wealth of Nations Mark II: Revised Extended Estimates of Foreign Assets and Liabilities, 1970-2004" in Crowe et. a. eds., *Macrofinancial Linkages: Trends, Crises, and Policies*, Washington DC: International Monetary Fund. <http://www.philiplane.org/EWN.html>
- League of Nations, various years, *World Economic Survey: 1926-1944*. All issues. (Geneva: League of Nations).
- Mizoguchi, Toshiyuki, and Mataji Umemura. 1988. *Basic Economic Statistics of Former Japanese Colonies, 1895-1938: Estimates and Findings*. Tokyo: Toyo Keizai Shinposha.
- Mody, Ashoka and Diego Saravia 2008) "From Crisis to IMF-Supported Program: Does democracy impede the speed required by financial markets?," IMF Working Paper 08/276.
- Reinhart, Carmen M. 2010, "This Time is Different Chartbook: Country Histories on Debt, Default, and Financial Crises," NBER Working Paper No. 15815, March.
- Reinhart, Carmen M. and Rogoff, Kenneth S. 2009, *This Time is Different: Eight Centuries of Financial Folly* (Princeton: Princeton Press).
- United Nations, 1948, Department of Economic Affairs, *Public Debt, 1914-1946* (New York: United Nations).
- United Nations, various years, *Yearbooks*, (New York: United Nations).
- World Bank, 2013, *International Debt Statistics*, Washington DC <http://data.worldbank.org/data-catalog/international-debt-statistics>
- World Bank, 2013, Quarterly External Debt Statistics, (QEDS),
<http://web.worldbank.org/WBSITE/EXTERNAL/DATASTATISTICS/EXTDECQEDS/0,,menuPK:1805431~pagePK:64168427~piPK:64168435~theSitePK:1805415,00.html>

