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# The economic and fiscal consequences of financial crises

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*The “deadly d’s”:* Sharp economic **downturns** follow banking crises; with government revenues dragged down, fiscal **deficits** worsen; deficits lead to **debt**; as debt piles up rating **downgrades** follow. For the most fortunate countries, it does not end in **default**.

Even a cursory reading of the global financial press in the past few months would lead one to despair that the world economy is moving through dark and uncharted waters. But, in fact, there is precedent.

In a recent paper, Kenneth Rogoff and I examined the international experience with episodes of severe banking crises. The depth, duration and characteristics of the economic slump following the crises traced out a few empirical regularities.<sup>1</sup> Our main findings in that paper can be summarized as follows:

- Financial crises are protracted affairs.
- Asset market collapses are deep and prolonged.

Real housing price declines average 35 percent stretched out over six years.

Equity price collapses average 55 percent over a downturn of about three and a half years.

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<sup>1</sup> “The Aftermath of Financial Crises,” (with Kenneth S. Rogoff), *American Economic Review*, forthcoming, May 2009. <http://terpconnect.umd.edu/~creinhar/Papers.html>

- There are profound declines in output and employment.

The unemployment rate rises an average of 7 percentage points over the down phase of the cycle, which lasts on average over four years.

Real GDP per capita falls (from peak to trough) an average of over 9 percent, the duration of the downturn averages roughly two years.

- There are significant adverse consequences of the financial crisis on government finances.

Tax revenues shrink as the economic conditions deteriorate, the fiscal deficit worsens markedly, and the real value of government debt tends to explode, rising an average of 86 percent in the major post–World War II episodes.

In the remainder of this note, I elaborate on these points. I follow up with a sketch of how the crisis, deteriorating economic conditions, and more precarious fiscal fundamentals impact sovereign risk in the aftermath of the crises episodes.

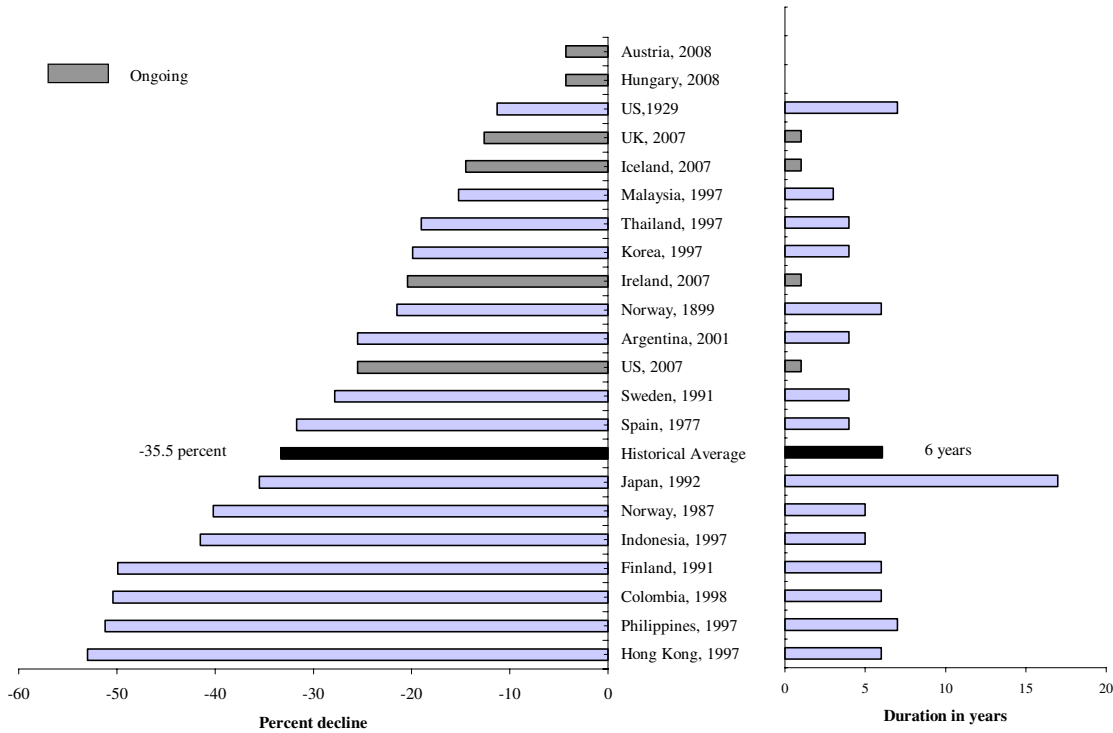
## **DOWNTURN**

It is now beyond contention that the present U.S. financial crisis is severe by any metric. As a result, we focus on systemic financial crises. The “big five” advanced economy crises include episodes in Spain (1977), Norway (1987), Finland (1991), Sweden (1991), and Japan (1992). Famous emerging market episodes in our study include the 1997–1998 Asian crisis (Hong Kong, Indonesia, Korea, Malaysia, the Philippines, and Thailand), Colombia (1998), and Argentina (2001). Central to the analysis is historical housing price data, which can be difficult to obtain and are critical for assessing the present episode. We therefore include two earlier historical cases for which housing prices are available, Norway in 1899 and the United States in 1929.

Figure 1 looks at the bust phase in housing price cycles surrounding banking crises, including the current episode in the United States and a number of other countries

now experiencing banking crises: Austria, Hungary, Iceland, Ireland, Spain, and the

FIGURE 1. Past and ongoing real house price cycles and banking crises: Peak-to-trough price declines (left panel) and years duration of downturn (right panel)



Sources: Reinhart and Rogoff (2009a).

United Kingdom. Ongoing crises are in dark shading, and past crises are in light shading.

The cumulative decline in real housing prices from peak to trough averages 35.5 percent.<sup>2</sup>

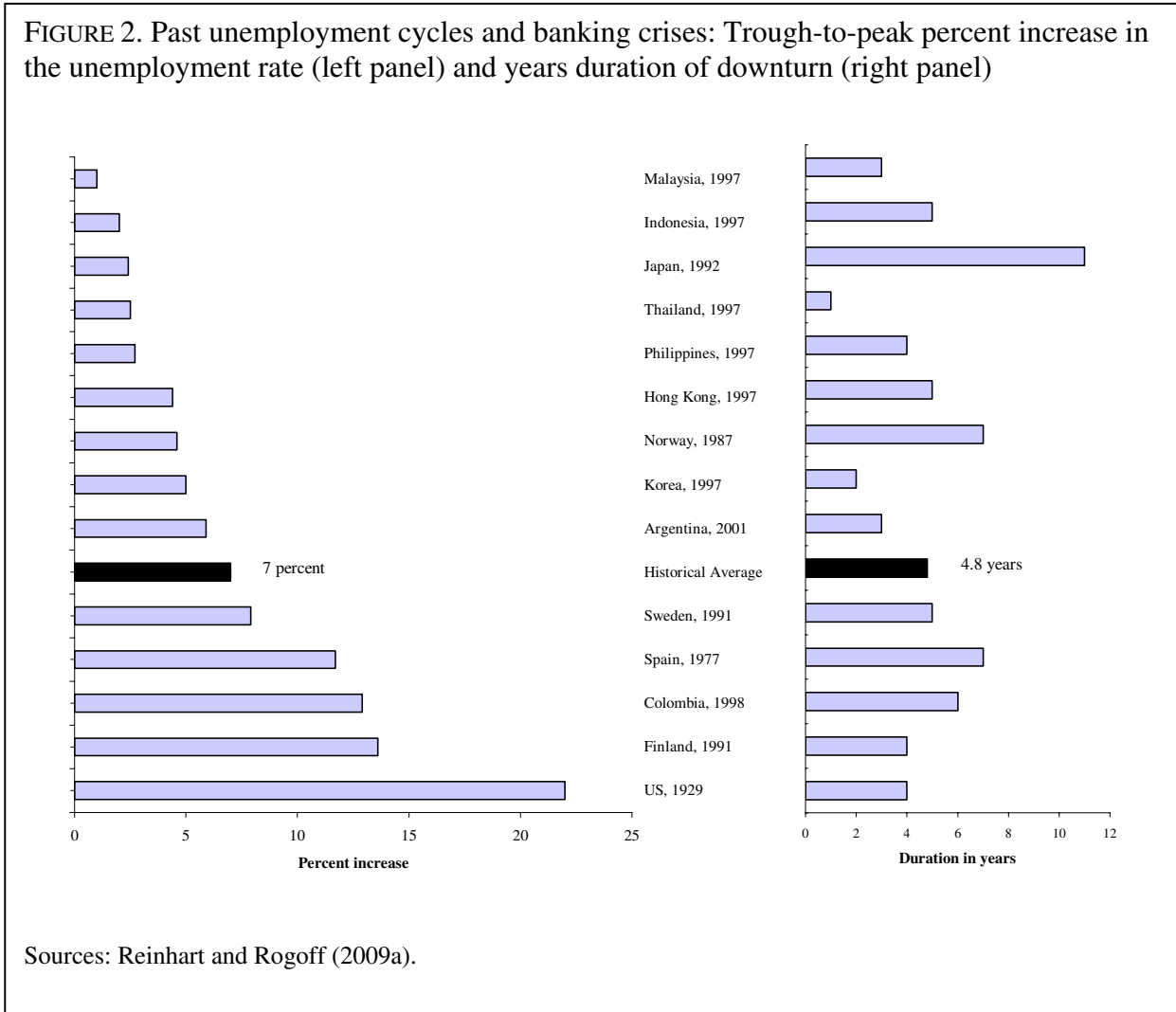
The most severe real housing price declines were experienced by Finland, the Philippines, Colombia and Hong Kong. Their crashes were 50 to 60 percent, measured from peak to trough. The housing price decline experienced by the United States to date

<sup>2</sup> The historical average, which is shaded in black in the diagram, does not include the ongoing crises.

during the current episode (almost 28 percent according to the Case–Shiller index) is already more than twice that registered in the U.S. during the Great Depression. The duration of housing price declines is quite long-lived, averaging roughly six years. Even excluding the extraordinary experience of Japan, the average remains over five years.

As illustrated in Reinhart and Rogoff (2009a), the equity price declines that accompany banking crises are far steeper than are housing price declines, if somewhat shorter lived. The average historical decline in equity prices is 55.9 percent, with the downturn phase of the cycle lasting 3.4 years. Notably, during the current cycle, Iceland and Austria have already experienced peak-to-trough equity price declines far exceeding the average of the historical comparison group. On average, unemployment rises for almost five years, with an increase in the unemployment rate of about 7 percentage points. While none of the postwar episodes rivals the rise in unemployment of over 20 percentage points experienced by the United States during the Great Depression, the employment consequences of financial crises are large in many cases.

Figure 2 looks at increases in unemployment rates across the historical episodes.



The emerging markets, particularly those in Asia, do better in terms of unemployment than do the advanced economies (Figure 2). There are well-known data issues in comparing unemployment rates across countries, as widespread “underemployment” in many emerging markets and the vast informal sector are not captured in the official unemployment statistics.

As to real per capita GDP around banking crises, the average magnitude of the decline is 9.3 percent. The declines in real GDP are smaller for advanced economies than for emerging market economies. A probable explanation for the more severe contractions in emerging market economies is that they are prone to abrupt reversals in the availability of foreign credit. When foreign capital comes to a “sudden stop,” to use the phrase coined by Guillermo Calvo, economic activity heads into a tailspin.<sup>34</sup> The cycle from peak to trough in GDP is much shorter, only two years.

### **DEFICITS**

Declining revenues and higher expenditures owing to a combination of bailout costs and higher transfer payments and debt servicing costs lead to a rapid and marked worsening in the fiscal balance. The episodes of Finland and Sweden stand out in this regard, as the latter went from a pre-crisis surplus of nearly 4 percent of GDP to a whopping 15 percent deficit-to-GDP ratio.

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<sup>3</sup> Calvo, Guillermo A., Alejandro Izquierdo, and Rudy Loo-Kung (2006) “Relative Price Volatility Under Sudden Stops: The Relevance of Balance Sheet Effects,” *Journal of International Economics* 9(1): 231–254.

<sup>4</sup> When no foreign financing is possible, emerging markets have seen consumption and investment implode during financial crises.

TABLE 1. Fiscal deficits

Country (crisis year)	Year before the crisis	Peak deficit (year)	Increase (- decrease) in the the fiscal deficit
<i>Central government balance/GDP</i>			
Argentina, 2001	-2.4	-11.9 (2002)	9.5
Chile, 1980	4.8	-3.2 (1985)	8.0
Colombia, 1998	-3.6	-7.4 (1999)	3.8
Finland, 1991	1.0	-10.8 (1994)	11.8
Indonesia, 1997	2.1	-3.7 (2001)	5.8
Japan, 1992	-0.7	-8.7 (1999)	9.4
Korea, 1997	0.0	-4.8 (1998)	4.8
Malaysia, 1997	0.7	-5.8(2000)	6.5
Mexico, 1994	0.3	-2.3 (1998)	2.6
Io.Norway, 1987	5.7	-2.5 (1992)	7.9
Spain, 1977 <sup>1</sup>	-3.9	-3.1 (1977)	-0.8
Sweden, 1991	3.8	-11.6(1993)	15.4
Thailand, 1997	2.3	-3.5(1999)	5.8

Source: Reinhart and Rogoff (2009b).<sup>5</sup>

<sup>1</sup> Spain was the only country in our sample to show an increase (modest) in per capita GDP growth during the post-crisis period.

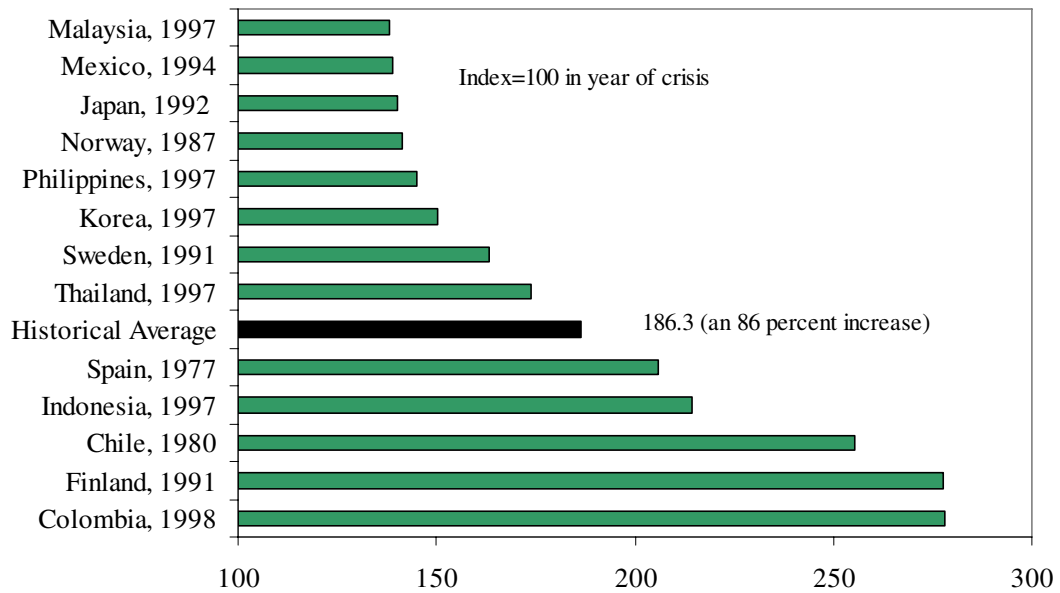
## DEBT

Figure 3 shows the rise in real government debt in the three years following a banking crisis. The deterioration in government finances is striking, with an average debt rise of over 86 percent. We look at percentage increase in debt, rather than debt-to-GDP, because sometimes steep output drops would complicate interpretation of debt-GDP ratios. As Reinhart and Rogoff (2009b) note, the characteristic huge buildups in government debt are driven mainly by sharp falloffs in tax revenue. The much publicized bank bailout costs are typically second order.

<sup>5</sup> Reinhart, Carmen M. and Kenneth S. Rogoff (2009) *This Time is Different: Eight Hundred Years of Financial Folly* (Princeton: Princeton University Press, forthcoming).



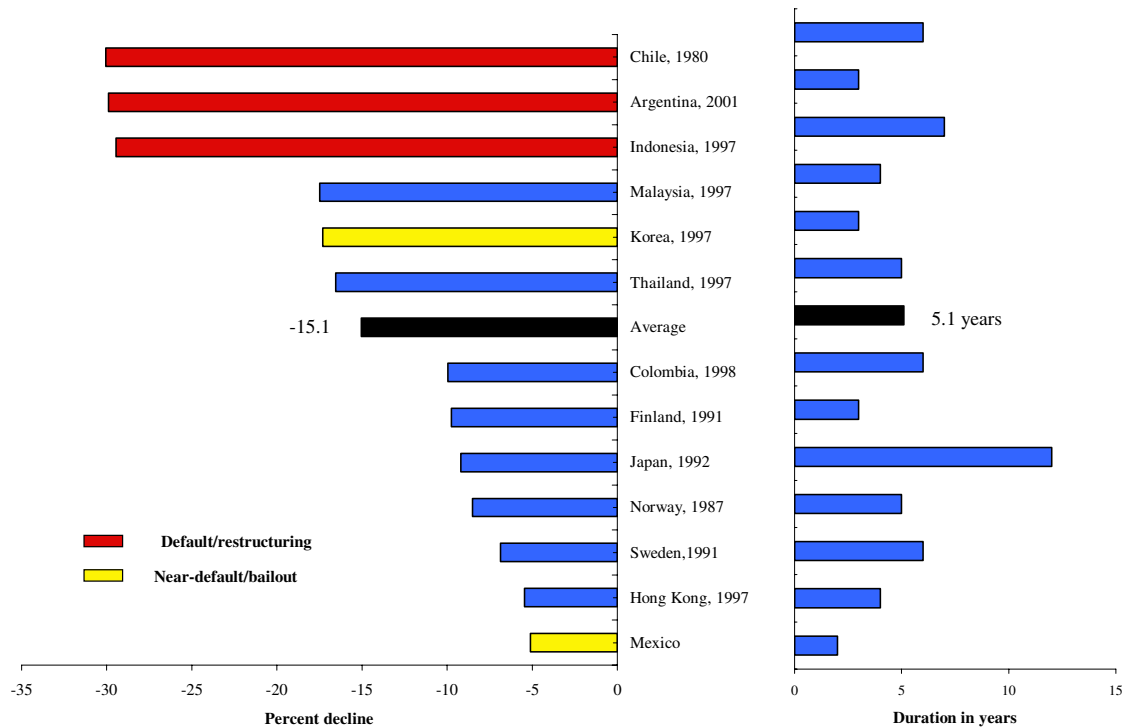
FIGURE 5.5. Cumulative increase in real public debt in the three years following the banking crisis



Sources: Reinhart and Rogoff (2008b) and sources cited therein.

### **DOWNGRADES (AND SOMETIMES DEFAULT)**

Institutional Investor sovereign ratings cycles and banking crises:  
 Peak-to-trough index declines (left panel) and years duration of downturn (right panel)



**CONCLUSIONS (NOT DELUSIONS)**

An examination of the aftermath of severe financial crises shows deep and lasting effects on asset prices, output and employment. Unemployment rises and housing price declines extend out for five and six years, respectively. Even recessions sparked by financial crises do eventually end, albeit almost invariably accompanied by massive increases in government debt. The crises, more often than not, adversely impact sovereign creditworthiness, as reflected in a higher risk premia. The effects, however, do not appear to be “permanent.”

The global nature of the present crisis will make it far more difficult for many countries to grow their way out through higher exports. The growth slowdown is

amplified in world commodity markets, as many emerging markets face steep declines in their terms of trade. If historical patterns hold, the current lull in sovereign defaults or restructurings in emerging markets will likely to come to an end, particularly if the recovery process in the world's largest economies is delayed.<sup>6</sup> Ecuador has already defaulted and others are teetering on the brink.

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<sup>6</sup> Reinhart and Rogoff (2009b).