



# Real Estate & Its Relation to the Financial Crisis

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A Joke on the streets of Moscow these days: “Everything the Communists told us about communism was a complete and utter lie. Unfortunately, everything the Communists told us about Capitalism turned out to be true.”  
– John Nellis, World Bank



•The disclosure that highly leveraged financial institutions in the United States (and abroad) were holding toxic securitised subprime mortgages shocked market participants. Banks, fearful of their own solvency, all but stopped lending. Issuance of corporate bonds, commercial paper, and a wide variety of other financial products largely ceased. Credit-financed economic activity was brought to a virtual standstill.

•Alan Greenspan strongly believes (and I concur) that the use of government credit must be temporary. Eventually, the most credible source of equity will be a partial restoration of the \$30 trillion of global stock market value wiped out in 2008, which would enable banks to raise needed private capital over time. Markets are being suppressed by a degree of fear not experienced since the early 20th century (in the United States).

•Another critical factor for the return of global financial stability is that of American homes (underlying many mortgage backed securities). As these prices stabilize we will be able to clarify the market value of financial institutions assets and therefore more closely compare book value with market pricing. This knowledge will help remove both risk and fear over time, and help stabilize stock prices.

•Temporary public capital infusions into banks would facilitate this process and arguably provide more benefit per dollar than conventional fiscal stimulus. Early on in this process, we will need to start unwinding the massive sovereign credit and guarantees put in place during the crisis, now estimated at \$7 trillion.



The bad bank intervention system calls for buying the very worst assets at their market value. Coupling this with an insurance system to insure to the market that the healthy assets are protected against catastrophe will allow the good banks to make a clean start and raise and lend capital. Each bank would be examined on its merits and cleaned out partially insuring against risks, re-capitalizing it with government capital as necessary. In some situations this will leave the government as the single largest shareholder (Royal Bank of Scotland), or the sole owner (Northern Rock). In such cases, nationalization is not an end unto itself, but a consequence of policy that will most rapidly return the banking system to health.

As such, a component of each of these intervention systems is likely to be the most effective overall. It will also be tempting to bind lending in a thicket of regulation. Some tighter regulation is in order, especially greater transparency, however, too tight a regulatory environment will strangle enterprise, which is certainly not the goal of logical reform of these institutions.





In the face of the current economic crisis it is easy to overlook some long-term factors that will surely affect the major economies around the world over the coming decades. Many of the world's largest economies have aging populations, commonly due to the rapid increase in births after World War II (the baby boom).

As this large group retires from the work force, which will be a steadily increasing number over the coming 20 to 25 or so years, the work force of these countries will significantly decrease, impacting GDP in these nations in all likelihood. This will also be coupled with an increase in the cost of social services, magnifying the downward affect of a smaller workforce.





**2008 Median Age:**

- Japan, Germany, & Italy =45
- France, the United Kingdom, & Spain = 42
- Russia = 40

**2005 % Population aged 60 & over:**

- |                 |                        |
|-----------------|------------------------|
| -Japan = 26.4   | -Spain = 21.7          |
| -Italy = 25.3   | -United Kingdom = 21.2 |
| -Germany = 25.1 | -France = 20.8         |
| Austria = 21.9  |                        |



**First:** Asset market collapses are deep and prolonged. Real housing price declines average 35.5 percent stretched out over five to six years, while equity price collapses average 55.9 percent over a downturn of 3.4 years.

**Second:** The aftermath of banking crises is associated with profound declines in output and employment. The unemployment rate raises an average of 7 percentage points over the down phase of the cycle, which lasts on average over 4.8 years. Output falls (from peak to trough) an average of over 9 percent in GDP, although the duration of the downturn, averaging 1.9 years, is considerably shorter than for unemployment.

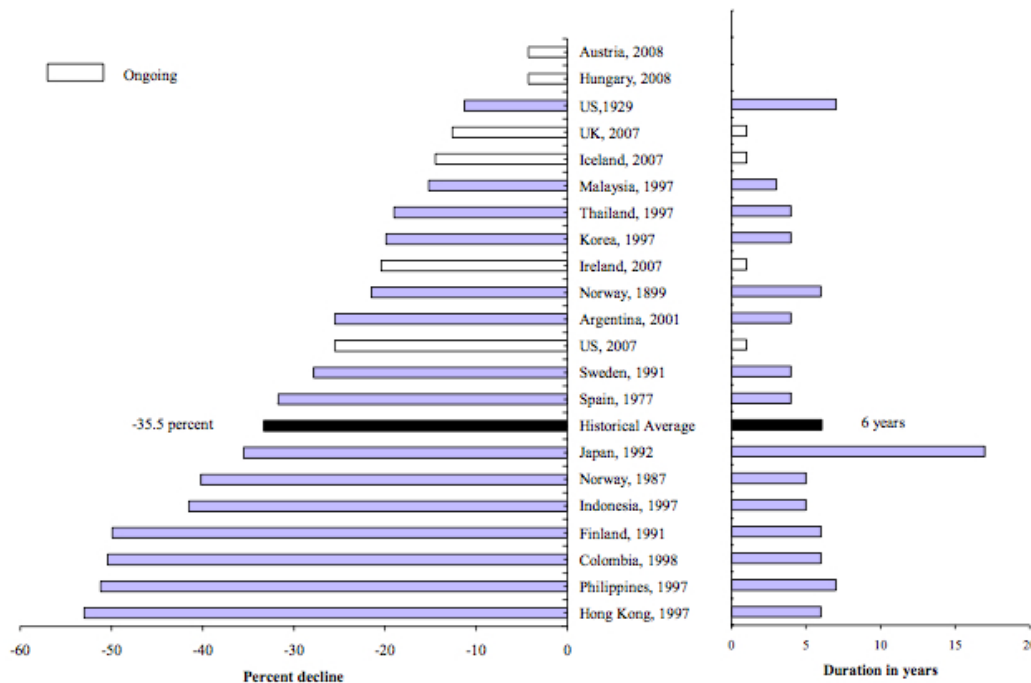
**Third:** The real value of government debt tends to explode, rising an average of 86.6 percent in the major post–World War II episodes. The main cause of debt explosions is not the widely cited costs of bailing out and recapitalizing the banking system. Bailout costs are difficult to measure, and there is considerable divergence among estimates from competing studies. But even upper-bound estimates pale next to actual measured rises in public debt. The big drivers of debt increases are the inevitable collapse in tax revenues that governments suffer in the wake of deep and prolonged output contractions, as well as often ambitious counter-cyclical fiscal policies aimed at mitigating the downturn.





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 (2008b) and sources cited therein.

Notes: Each banking crisis episode is identified by country and the beginning year of the crisis. Only major (systemic) banking crises episodes are included, subject to data limitations. The historical average reported does not include ongoing crises episodes. Consumer price indices are used to deflate nominal house prices.

This illustration shows that the average down cycle in real estate values (sale prices) shows a decline from peak to trough of 35.5%. This decline will take 5 to 6 years to reach the bottom (five if you exclude Japan from the survey, where the decline was unusually long at 17 years). Taking a close look at the United States shows a current decrease at 21% from 2006 to 3/09 (some surveys vary).



# NATIONAL ASSOCIATION OF REALTORS®

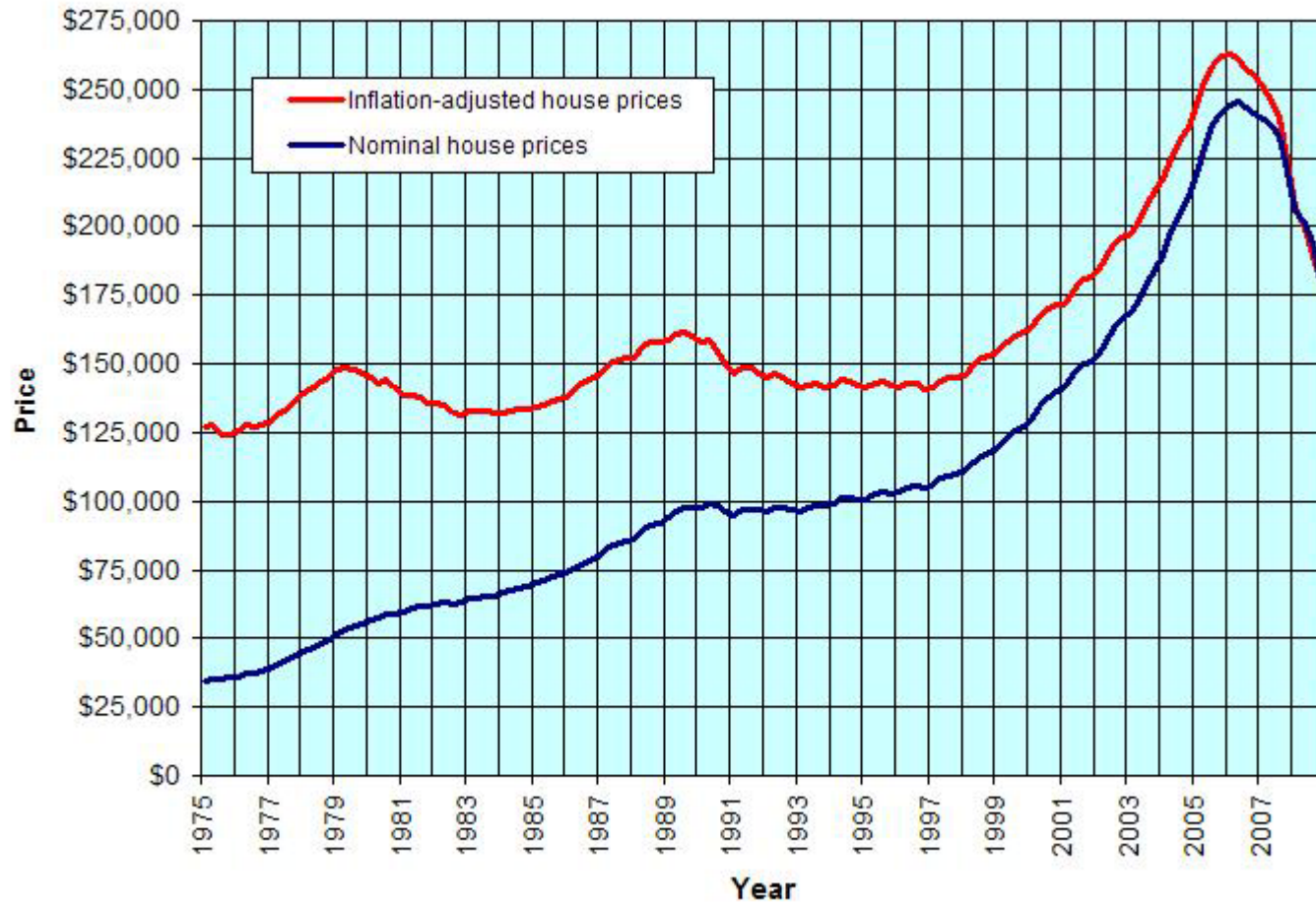
## Existing Home Sales

Year	U.S.					U.S.					Inventory	Mos. Supply		
	U.S.	Northeast	Midwest	South	West	U.S.	Northeast	Midwest	South	West				
2006	6,478,000	1,086,000	1,483,000	2,563,000	1,346,000	*	*	*	*	*	3,450,000	6.5		
2007	5,652,000	1,006,000	1,327,000	2,235,000	1,084,000	*	*	*	*	*	3,974,000	8.9		
2008	4,913,000	849,000	1,129,000	1,865,000	1,070,000	*	*	*	*	*	3,700,000	10.5		
		Seasonally Adjusted Annual Rate						Not Seasonally Adjusted						
2008	Mar	4,920,000	890,000	1,170,000	1,920,000	950,000	375,000	65,000	90,000	147,000	73,000	4,118,000	10.0	
2008	Apr	4,850,000	860,000	1,110,000	1,910,000	980,000	494,000	74,000	100,000	168,000	92,000	4,549,000	11.3	
2008	May	4,950,000	890,000	1,140,000	1,910,000	1,020,000	483,000	82,000	117,000	180,000	104,000	4,482,000	10.9	
2008	Jun	4,900,000	860,000	1,120,000	1,880,000	1,040,000	504,000	91,000	118,000	188,000	107,000	4,495,000	11.0	
2008	Jul	4,990,000	900,000	1,130,000	1,850,000	1,110,000	504,000	101,000	117,000	180,000	106,000	4,575,000	11.0	
2008	Aug	4,930,000	860,000	1,140,000	1,860,000	1,080,000	489,000	87,000	111,000	185,000	106,000	4,335,000	10.6	
2008	Sept	5,100,000	850,000	1,160,000	1,860,000	1,230,000	438,000	73,000	104,000	163,000	98,000	4,272,000	10.1	
2008	Oct	4,940,000	830,000	1,110,000	1,830,000	1,170,000	413,000	69,000	88,000	156,000	100,000	4,198,000	10.2	
2008	Nov	4,540,000	740,000	1,010,000	1,650,000	1,140,000	322,000	51,000	67,000	119,000	85,000	4,163,000	11.0	
2008	Dec	4,740,000	750,000	1,060,000	1,740,000	1,200,000	361,000	55,000	79,000	139,000	88,000	3,700,000	9.4	
2009	Jan	4,490,000	640,000	1,030,000	1,640,000	1,170,000	257,000	35,000	54,000	96,000	72,000	3,611,000	9.7	
2009	Feb r	4,710,000	750,000	1,040,000	1,740,000	1,180,000	280,000	45,000	62,000	105,000	68,000	3,798,000	9.7	
2009	Mar p	4,570,000	690,000	1,040,000	1,710,000	1,130,000	360,000	52,000	84,000	135,000	89,000	3,737,000	9.8	
	vs. last month:	-3.0%	-8.0%	0.0%	-1.7%	-4.2%	28.6%	15.6%	35.5%	28.6%	30.9%	-1.6%	1.0%	
	vs. last year:	-7.1%	-22.5%	-11.1%	-10.9%	18.9%	-4.0%	-20.0%	-6.7%	-8.2%	21.9%	-9.3%	-2.0%	
	year-to-date:						0.897	0.132	0.200	0.336	0.228			

## Sales Price of Existing Homes

Year	U.S.					U.S.						
	U.S.	Northeast	Midwest	South	West	U.S.	Northeast	Midwest	South	West		
		Median						Average (Mean)				
2006	\$221,900	\$271,900	\$167,800	\$183,700	\$342,700	\$268,200	\$299,700	\$205,300	\$230,000	\$371,300		
2007	219,000	279,100	165,100	179,300	335,000	266,000	307,100	200,500	225,600	365,900		
2008	198,100	266,400	154,100	169,200	271,500	242,700	297,800	183,400	211,600	312,300		
		Not Seasonally Adjusted						Not Seasonally Adjusted				
2008	Mar r	200,100	284,000	150,400	167,400	283,900	247,200	311,400	182,600	209,200	324,100	
2008	Apr	201,300	262,600	157,200	169,700	284,700	247,300	295,800	187,900	212,600	325,800	
2008	May	207,900	278,400	162,700	174,600	285,000	252,700	309,200	190,600	218,500	325,600	
2008	Jun	215,000	264,900	172,800	185,300	286,000	257,700	298,700	202,100	230,100	328,800	
2008	Jul	210,100	278,600	167,100	177,000	281,200	253,000	307,400	196,300	221,200	321,300	
2008	Aug	203,200	269,500	167,300	176,900	251,200	245,600	299,000	195,500	220,900	294,100	
2008	Sept	191,400	250,800	149,700	165,700	255,100	235,000	288,100	177,300	206,100	299,000	
2008	Oct	186,400	241,800	145,000	161,200	258,100	229,600	277,000	174,900	202,800	293,500	
2008	Nov	180,300	257,000	141,400	153,500	241,000	223,000	285,000	167,300	191,700	283,000	
2008	Dec	175,700	234,300	140,700	153,500	229,700	217,600	267,600	167,500	193,200	268,100	
2009	Jan	164,800	227,000	131,000	143,300	215,500	206,700	262,100	157,900	180,300	256,200	
2009	Feb r	168,200	236,400	130,000	145,600	230,400	235,000	288,100	177,300	206,100	299,000	
2009	Mar p	175,200	231,700	141,300	146,900	252,400	217,300	264,500	163,200	184,600	289,300	
	vs. last year:	-12.4%	-18.4%	-6.1%	-12.2%	-11.1%	-12.1%	-15.1%	-10.6%	-11.8%	-10.7%	

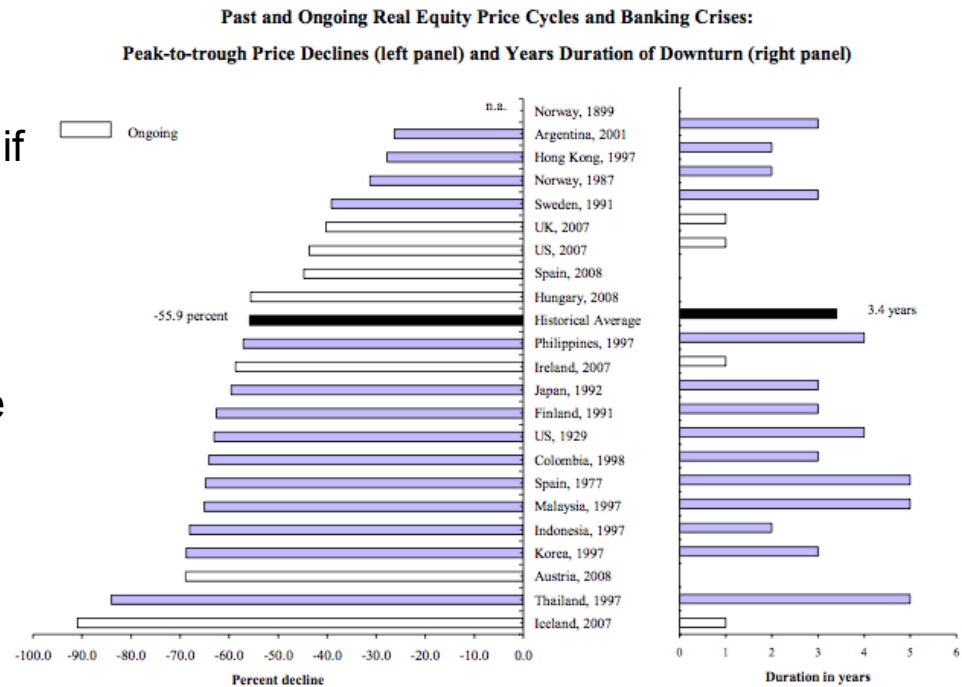
### United States House Prices





Equity price declines (stocks, bonds and related instruments) that accompany banking crises are far steeper than housing price declines, if somewhat shorter lived. The shorter duration of the downturn when compared with real estate prices is consistent with the observation that equity prices are far less inertial. The average historical decline in equity prices is 55.9 percent, with the downturn phase of the cycle lasting 3.4 years. The above chart shows equity declines for the United States to be above 40% in the first year of the down cycle.

Figure 2



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

Notes: Each banking crisis episode is identified by country and the beginning year of the crisis. Only major (systemic) banking crises episodes are included subject to data limitations. The historical average reported does not include ongoing crises episodes. Consumer price indices are used to deflate nominal equity prices.



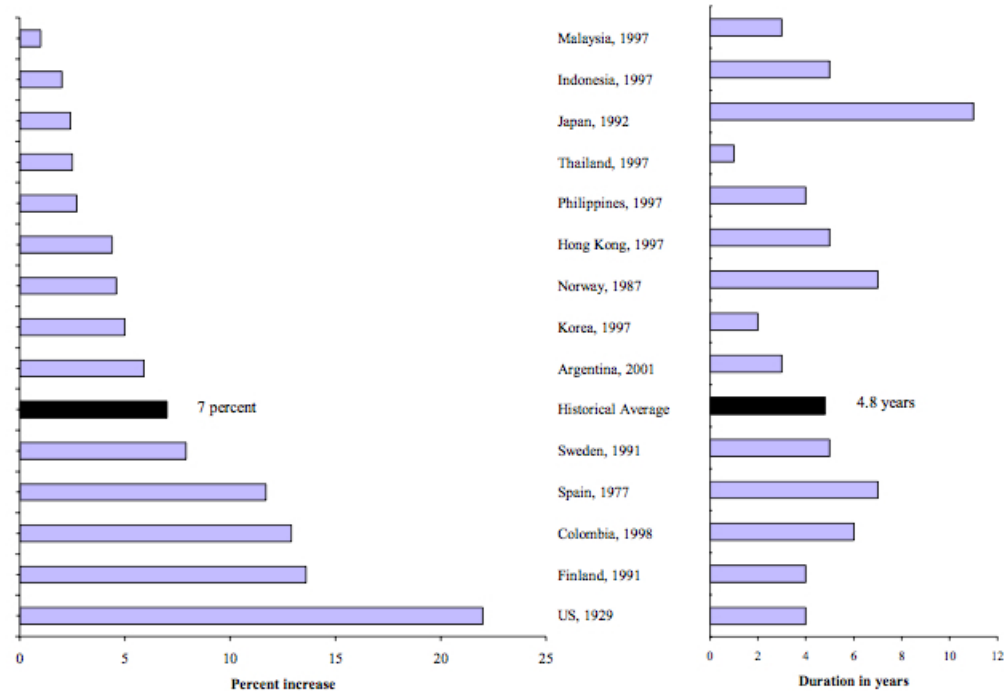
The data tends to suggest that the downturn in the equity markets actually began in mid to late 2007. As such, this data tends to suggest that we are a little more than a year (18 months possibly) into this down cycle.



Figure 3

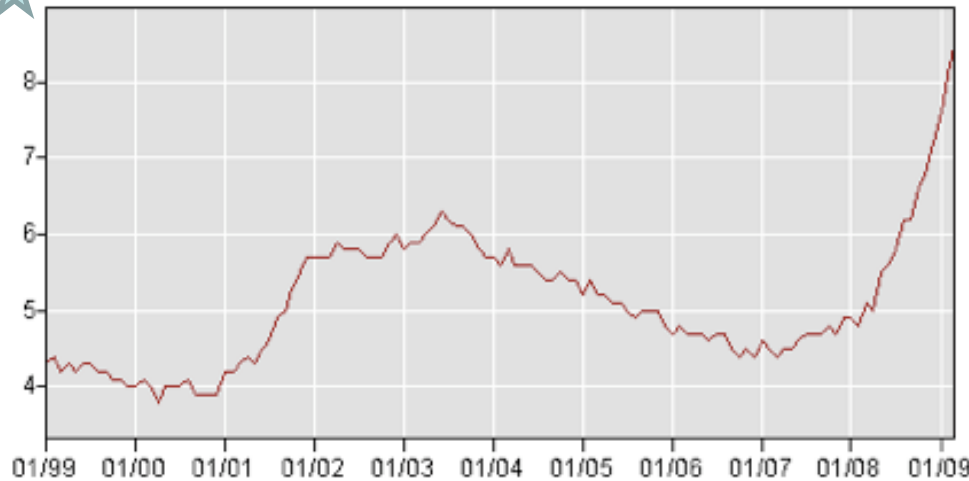
Past Unemployment Cycles and Banking Crises: Trough-to-peak  
Percent Increase in the Unemployment Rate (left panel) and Years Duration of Downturn (right panel)

On average based on historical crisis precedent, unemployment rises for almost 4.8 years, with an increase in the unemployment rate of about 7 percentage points.



Sources: OECD, IMF, Historical Statistics of the United States (HSOUS), various country sources, and authors' calculations.

Notes: Each banking crisis episode is identified by country and the beginning year of the crisis. Only major (systemic) banking crises episodes are included, subject to data limitations. The historical average reported does not include ongoing crises episodes.



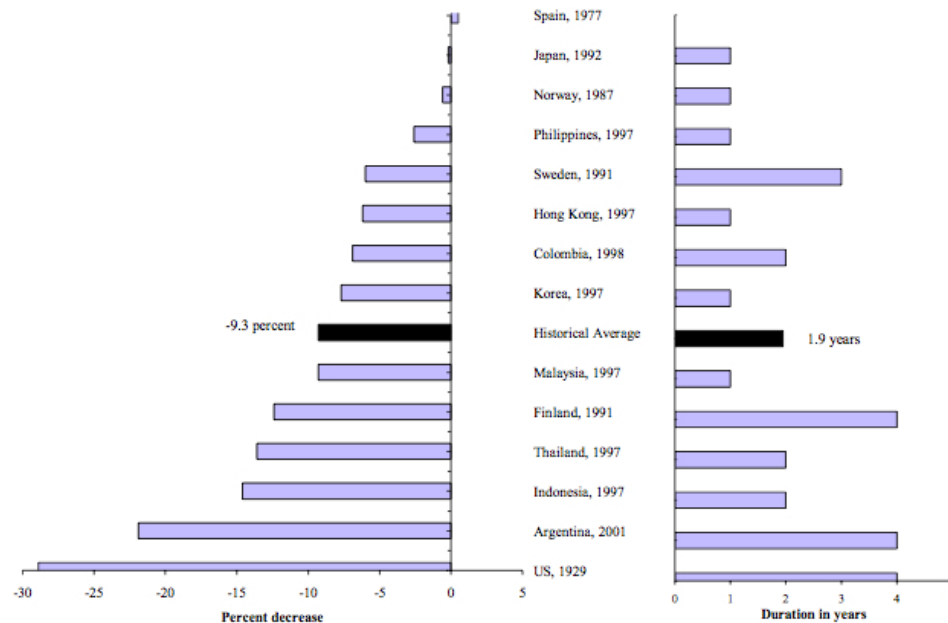
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1999	4.3	4.4	4.2	4.3	4.2	4.3	4.3	4.2	4.2	4.1	4.1	4.0
2000	4.0	4.1	4.0	3.8	4.0	4.0	4.0	4.1	3.9	3.9	3.9	3.9
2001	4.2	4.2	4.3	4.4	4.3	4.5	4.6	4.9	5.0	5.3	5.5	5.7
2002	5.7	5.7	5.7	5.9	5.8	5.8	5.8	5.7	5.7	5.7	5.9	6.0
2003	5.8	5.9	5.9	6.0	6.1	6.3	6.2	6.1	6.1	6.0	5.8	5.7
2004	5.7	5.6	5.8	5.6	5.6	5.6	5.5	5.4	5.4	5.5	5.4	5.4
2005	5.2	5.4	5.2	5.2	5.1	5.1	5.0	4.9	5.0	5.0	5.0	4.8
2006	4.7	4.8	4.7	4.7	4.7	4.6	4.7	4.7	4.5	4.4	4.5	4.4
2007	4.6	4.5	4.4	4.5	4.5	4.6	4.7	4.7	4.7	4.8	4.7	4.9
2008	4.9	4.8	5.1	5.0	5.5	5.6	5.8	6.2	6.2	6.6	6.8	7.2
2009	7.6	8.1	8.5									

Unemployment in the United States was 8.5% March 2009, with an average of 5.8% across 2008. Based on this data it appears that unemployment began to rise slowly in early to mid 2007 and began to pick up steam late in 2008. As such, this factor has been worsening for approximately 18 months. If there is a 7% increase in unemployment in the United States to the peak, then this figure is likely to increase to approximately 11.5% before it's decline back to a long term stabilized rate.



Figure 4 looks at the cycles in real per capita GDP around banking crises. The average magnitude of the decline is surprisingly large at 9.3 percent.

**Figure 4**  
**Past Real Per Capita GDP Cycles and Banking Crises: Peak-to-trough**  
**Percent Decline in Real GDP (left panel) and Years Duration of Downturn (right panel)**

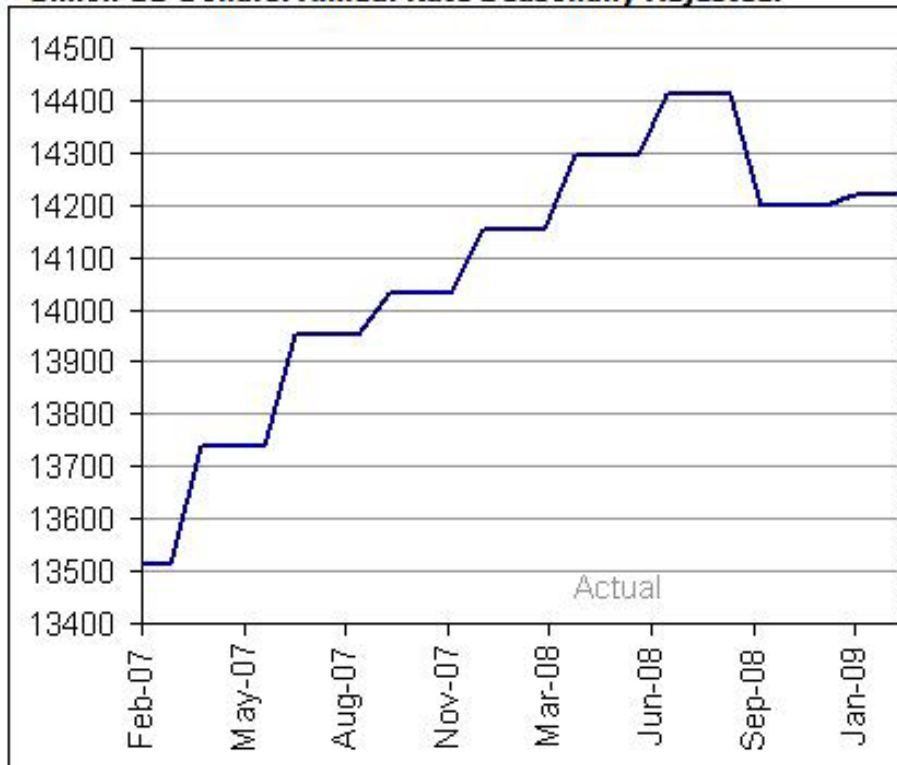


Sources: Total Economy Database (TED), Historical Statistics of the United States (HSOUS), and authors' calculations.

Notes: Each banking crisis episode is identified by country and the beginning year of the crisis. Only major (systemic) banking crises episodes are included, subject to data limitations. The historical average reported does not include ongoing crises episodes. Total GDP, in millions of 1990 US\$ (converted at Geary Khamis PPPs) divided by midyear population.



**U.S. GDP Gross Domestic Product**  
**Past Trend Present Value & Future Projection**  
**Billion US Dollars. Annual Rate Seasonally Adjusted.**



An interesting data comparison showed a 79% increase in home sale prices over the 1997 to 2008 period. GDP over the same period increased by 72% (not adjusted for inflation) showing a similar relationship between the average cost of housing and national production.

Adjusting for inflation, GDP increased by 33.5% over the 1997 to 2008 period, compared to the average CPI increase of 29% over the 1997 to 2007 period. Median income levels grew 5% more than CPI over the same period.

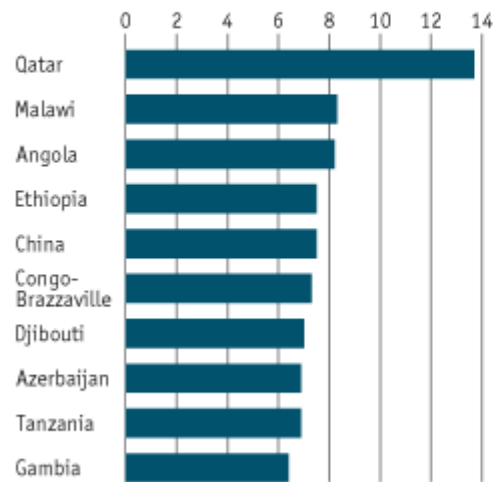
These relationships suggest that the cost of true housing (relative to income performance) to the consumer in the United States has stayed relatively stable over this period.



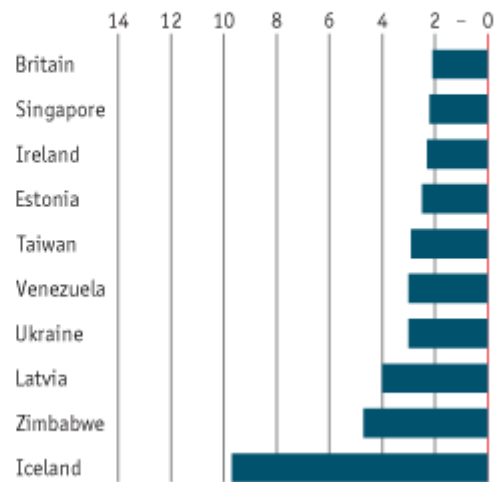
Line	2007 I	2007 II	2007 III	2007 IV	2008 I	2008 II	2008 III	2008 IV	
1	<b>Gross domestic product</b>	<b>0.1</b>	<b>4.8</b>	<b>4.8</b>	<b>-0.2</b>	<b>0.9</b>	<b>2.8</b>	<b>-0.5</b>	<b>-6.3</b>
2	<b>Personal consumption expenditures</b>	<b>3.9</b>	<b>2.0</b>	<b>2.0</b>	<b>1.0</b>	<b>0.9</b>	<b>1.2</b>	<b>-3.8</b>	<b>-4.3</b>
3	Durable goods	9.2	5.0	2.3	0.4	-4.3	-2.8	-14.8	-22.1
4	Nondurable goods	3.5	1.9	1.2	0.3	-0.4	3.9	-7.1	-9.4
5	Services	3.1	1.4	2.4	1.4	2.4	0.7	-0.1	1.5
6	<b>Gross private domestic investment</b>	<b>-9.6</b>	<b>6.2</b>	<b>3.5</b>	<b>-11.9</b>	<b>-5.8</b>	<b>-11.5</b>	<b>0.4</b>	<b>-23.0</b>
7	Fixed investment	-3.4	3.0	-0.9	-6.2	-5.6	-1.7	-5.3	-22.0
8	Nonresidential	3.4	10.3	8.7	3.4	2.4	2.5	-1.7	-21.7
9	Structures	11.2	18.3	20.5	8.5	8.6	18.5	9.7	-9.4
10	Equipment and software	0.0	6.9	3.6	1.0	-0.6	-5.0	-7.5	-28.1
11	Residential	-16.2	-11.5	-20.6	-27.0	-25.1	-13.3	-16.0	-22.8
12	Change in private inventories	---	---	---	---	---	---	---	---
13	<b>Net exports of goods and services</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>
14	Exports	0.6	8.8	23.0	4.4	5.1	12.3	3.0	-23.6
15	Goods	2.1	6.9	21.8	5.1	4.5	16.3	3.7	-32.0
16	Services	-2.7	13.3	25.9	2.7	6.4	3.8	1.4	-1.5
17	Imports	7.7	-3.7	3.0	-2.3	-0.8	-7.3	-3.5	-17.5
18	Goods	8.4	-4.0	2.4	-2.6	-2.0	-7.1	-4.7	-19.6
19	Services	4.2	-2.0	6.3	-0.9	5.5	-8.0	3.3	-6.7
20	<b>Government consumption expenditures and gross investment</b>	<b>0.9</b>	<b>3.9</b>	<b>3.8</b>	<b>0.8</b>	<b>1.9</b>	<b>3.9</b>	<b>5.8</b>	<b>1.3</b>
21	Federal	-3.6	6.7	7.2	-0.5	5.8	6.6	13.8	7.0
22	National defense	-5.9	8.5	10.2	-0.9	7.3	7.3	18.0	3.4
23	Nondefense	1.2	3.1	1.2	0.4	2.9	5.0	5.1	15.3
24	State and local	3.6	2.4	1.9	1.6	-0.3	2.5	1.3	-2.0

## GDP growth forecasts, 2009

Fastest ten, %



Slowest ten, %



Source: Economist Intelligence Unit

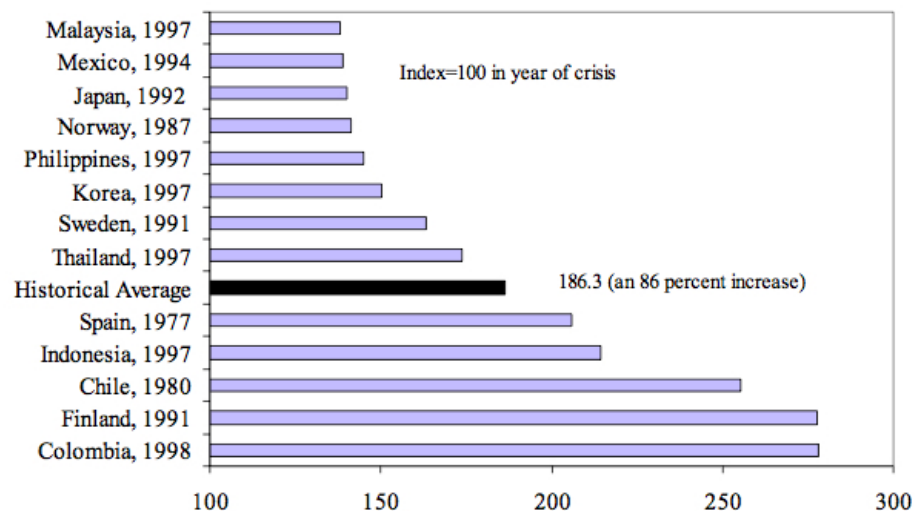


Figure 5 shows the rise in real government debt in the three years following a banking crisis. The deterioration in government finances is larger than most would imagine, with an average debt rise of over 86.6 percent.

The characteristic huge buildups in government debt are driven mainly by sharp falloffs in tax revenue and, in many cases, big surges in government spending to fight the recession. The much ballyhooed bank bailout costs are, in several cases, only a relatively minor contributor to post-financial crisis debt burdens.

Figure 5

#### Cumulative increase in real public debt in the three years following the banking crisis



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

Notes: Each banking crisis episode is identified by country and the beginning year of the crisis. Only major (systemic) banking crises episodes are included, subject to data limitations. The historical average reported does not include ongoing crises episodes, which are omitted altogether, as these crises begin in 2007 or later, and debt stock comparison here is with three years after the beginning of the banking crisis.

## Debt Position and Activity Report

### Marketable Debt vs. Nonmarketable Debt

as of January 31, 2008  
(in Millions)

Categories	Amount	Percent of Total
<b>Total Debt Outstanding</b>	<b>\$10,832,080</b>	
- Marketables	\$5,749,319	54.08%
Commercial Book-Entry	\$5,696,870	53.30%
Legacy Treasury Direct	\$54,144	0.60%
Treasury Direct	\$4,919	0.05%
Federal Financing Bank	\$14,000	0.13%
Registered	\$77	0.00%
Bearer	\$106	0.00%
- Nonmarketables	\$4,882,164	45.32%
Savings Bonds	\$199,810	1.82%
SLGS	\$244,800	2.30%
GAS	\$4,406,044	41.44%
Others *	\$37,511	0.35%
Average Interest Rate		3.81%

### Total Public Debt Outstanding

as of January 31, 2008  
(in Millions)

Categories	Amount	Percent of Total
Debt Held by the Public	\$6,317,209	59.42%
Intragovernmental Holdings	\$4,314,781	40.58%
<b>Total Public Debt Outstanding</b>	<b>\$10,832,080</b>	<b>100.00%</b>
Flow of Funds Annually FY 2008**	\$85 Trillion	
Current Fiscal Year Flow of Funds as of January 31, 2009	\$35 Trillion	
Projected Flow of Funds - Remainder of FY 2009	\$48 Trillion	

### Total Debt Subject to Limit

as of January 31, 2008  
(in Millions)

Categories	Amount	Percent of Total
Debt Held by the Public	\$8,200,898	59.52%
Intragovernmental Holdings	\$4,278,434	40.48%
<b>Total Public Debt Outstanding Subject to Statutory Debt Limit</b>	<b>\$10,599,310</b>	<b>100.00%</b>
Current Statutory Debt Limit	\$11,315,000	
Balance of Statutory Debt Limit	\$745,690	

\* Includes Domestic Series Securities, Foreign Series Securities, ISA Series Securities, Maturity Undersubscribed Debt and Hope Bonds.  
\*\* Refer to the Total Activity (Issues + Redemptions) table on page 2 for the figure.  
Totals may not agree due to rounding.



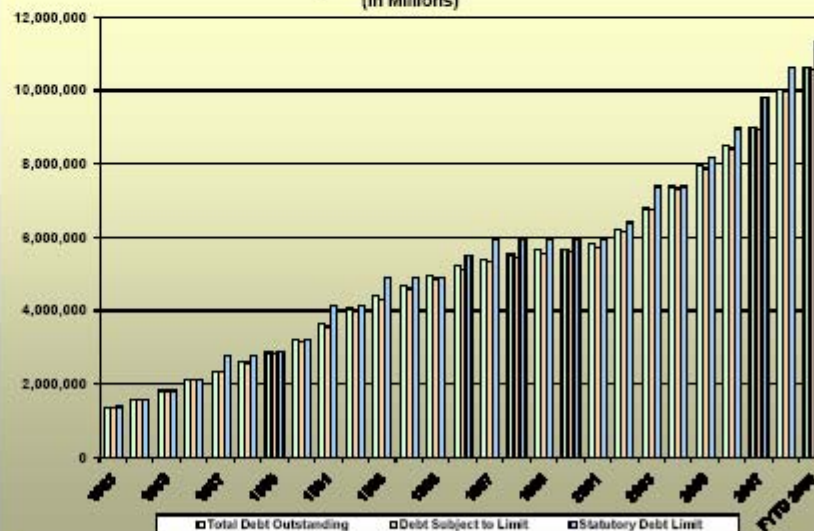
### Public Debt's Transactions

as of January 31, 2008  
(in Millions)

Fiscal Year	Interest Payments	Related to Debt Outstanding
2007	\$394,021	\$78,986,464
2008	\$378,704	\$81,627,808
Fiscal Year 2009 (by quarter)	Interest Payments	Related to Debt Outstanding
1st Quarter	\$141,474	\$26,220,362
2nd Quarter	\$11,216	\$8,569,147
3rd Quarter	\$0	\$0
4th Quarter	\$0	\$0
FYTD 2009	\$152,690	\$34,789,497

49% is the percentage of total FARD transactions related to interest payment and Debt Outstanding transactions.

### History of the Public Debt \* (in Millions)



\* The information presented in this graph provides a history of the Public Debt as it is reported on the fiscal year end (September) Monthly Statement of the Public Debt (MSPD). Federal Financing Bank (\$14,000 million) is included in this graph. A similar graph is provided in the Overview to the Schedules of Federal Debt, and does not include Federal Financing Bank information.



The intervention system most likely to create the most benefit for the economy is a combination of insurance and good / bad bank methods. This will also certainly create some nationalized institutions, as the government will in some cases become the majority stakeholder. The rescue intervention should shock the market in its scale, which will have the effect of bleeding off some of the persistent psychological fear/paralysis (sooner than it would otherwise), which is worsening an already bad financial crisis.



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. On the encouraging side, output declines (GDP) last only two years on average. Even recessions sparked by financial crises do eventually end. However, they are almost invariably accompanied by massive increases in government debt.