

Real Estate and the Financial Crisis, Systemic Shock Analysis

Steven L. Nystrom, MA, MAI, United States

Draft April 5, 2010

Key words: Affordable housing, real estate; world financial crisis; mortgage backed securities; capacity building; land management; crisis recovery; real estate taxation, valuation, risk management, real estate development

1. SUMMARY & INTRODUCTION

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. This was the setting for the financial crisis that generally began in 2007 to 2008.

Slow growth from this crisis point can be expected as long as the more fragile economies, mainly in the rich countries, continue to be careful. This will continue for a decade or so until the effects of demographic shifts begin to have costly impacts for many countries, particularly in Europe, the developed world, and China. The developing world will be largely spared these problems due to a much lower average age.

With the general fall of centrally planned economies around the world a massive amount of low cost labor has saturated the market, depressing the cost of goods as wages to these workers slowly increase. As these developing countries strengthen economically, wages and costs will increase, returning more inflationary pressure to the globe.

Energy concerns are growing due to a narrow spread between demand for oil and current capacity. However, technology improvements in recent years, particularly in natural gas should ease energy concerns over the coming decades as the geopolitics of energy readjust to this abundant resource spread across the globe.

The buyer / borrowing pool in real estate transactions is currently constrained to a fraction of its normal level due to limited availability of credit. Now with the world economic recovery underway in most countries, it appears that the real estate sector has recovered slower than most other major sectors of the economy.

An examination of the aftermath of severe financial crises shows deep and lasting effects on asset prices, output and employment. The swift and adequate world response to the crisis turned what could have been a world depression into a manageable recession.

Real Estate and the Financial Crisis, Systemic Shock Analysis

Steven L. Nystrom, MA, MAI, United States

Draft April 5, 2010

2. THE AMERICAN BAILOUT AND CAPITAL MARKETS IN EARLY 2010

Macroprudential Policy: Banks tend to copy the lending practices of other banks. As such, they become exposed to similar risks by making very similar loans. If all banks operate similarly, risks increase as exposure increases across a wide capital market. Since banks lend to each other, the crisis has shown that risks can also spread throughout the financial system much like a virus, and can be as difficult to diagnosis and cure.

Because of these risks, rules to ensure the safety of an individual bank is insufficient and “macroprudential” regulation to prevent failures of the financial system as a whole become necessary.¹ Unfortunately, there has been little agreement on just how such regulation should be structured to prevent systemic shock. Two new reports help to fill this gap. One of these is a discussion paper from the Bank of England, which shows the elements of macroprudential policy and identifies what needs to be decided before it is put into practice². The other by the Warwick Commission, discusses specific reforms³.

The first step is to determine what the objective for the macroprudential policy ought to be but limiting it to “making finance safer” is probably ambitious enough. The next obvious step is deciding how to achieve this aim. Since boom periods lead to a general lending frenzy and market slowdowns are often reinforced by lenders making credit scarce, feeding the fall, macroprudential regulation should (so the papers espouse) should limit lending in booms and reinforce lending in times of recession. This can be done by tailoring capital requirements to the credit cycle. Whenever credit markets appear too overheated, an increase in capital requirements can be used to temper the market, and when recession fears loom, some limited loosening of capital requirements might also be in order. The adjustments should be small, and reconsidered regularly as changes in capital markets and risk assessment make any hard and fast rule difficult to justify over a long period of time, as the technologies of finance evolve.

Some possibilities are for different types of lending to have different capital requirements (as risks are also uneven). Additionally, systemic problems could arise if capital requirements are not properly matched between the long-lived nature of its asset relative to the funding. Both reports agree that systemically important banks, those “too big to fail”, should be required to hold extra capital as they also hold greater risk to society.

The difficulty of macroprudential policy however is the ability of regulators to both understand the market forces at work, as well as the political pressure that will face these same regulators in both boom and bust times. A poorly designed policy set could end up being worse than no policy at all.

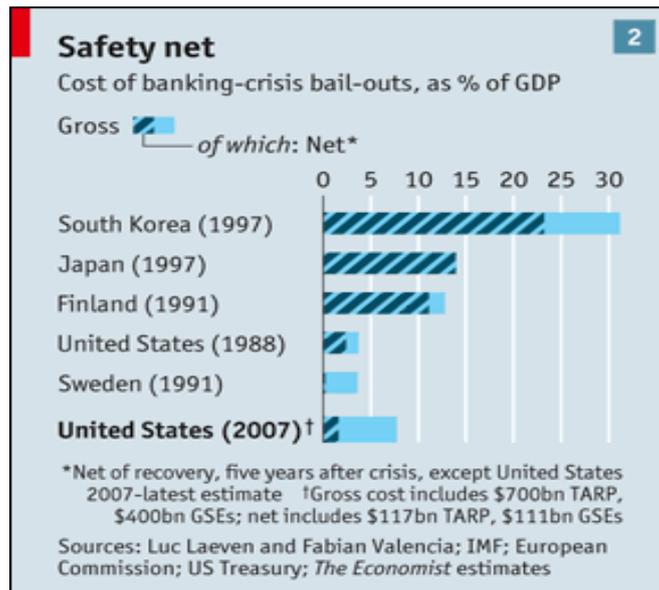
Megabanks in the USA: At the end of 2009, the American megabanks were scrambling to repay their share of the \$700 billion in TARP funds (Troubled Asset Relief Program). A report from the TARP Special Inspector General's Office noted that American taxpayers stood to make a profit on these loans to the megabanks. However, there is still a lack of fundamental and meaningful reform to the banking industry⁴. The program has as yet been insufficient to convince banks to alter their executive compensation practices, jumpstart lending, or convince Wall Street that there's no such thing as "too big to fail". Lending continues to decrease (as of January 2010).

That aside, combined bad-debt reserves for the four American mega-banks (Bank of America, Citigroup, wells Fargo, & JP Morgan Chase) stood at 4.3% by January of 2010, compared to 2.6% a year earlier. Core capital reached \$400 billion. This is beyond the target set by the Federal Reserve's stress tests in May 2009, and is almost double the amount available to them at the end of 2008⁵. Unfortunately, many of the megabanks "level 3 assets" are illiquid and hard to value, and some of the bad debt recognition is probably too optimistic. The megabanks funding costs are extremely low, and their profits are still too tied to near free funding that can't last forever. At least it does appear that they are standing again, and will continue to do so, even in the face of the likely slow general American market recovery.

The cost of the TARP program to American taxpayers will likely be less than 1% of GDP⁶, while previous systemic financial crises have cost 13% on average (International Monetary Fund). The unexpectedly low cost of the bail-out is not just limited to the United States. Officials around the world are beginning to believe that the cost will be much smaller than past crises. Most of the final losses from the TARP program will be concentrated on the automotive industry bailout, their financing arms, AIG, and subsidies to homeowners.

Unfortunately, despite this rosy prognosis, lending continues to be anemic. Both Fannie Mae and Freddie Mac, the two USA government sponsored enterprises that hold half of American residential mortgages, look much worse. The total cost to these enterprises may total \$330 to \$440 billion, or 2% to 3% of pre-crash GDP. Additionally, the effect of the financial crisis on government revenue, and hence government debt as it struggles to regain its economic feet, is not part of this calculation.

In general, the United States and many other countries appeared to follow what the IMF and other policy setters suggest as the "best practices". There was a rapid application of government guarantees, ending the panic more or less, targeted bank recapitalization to restore solvency, general transparency regarding banks health, helping restore investor confidence and enabled them to raise private capital. The long term picture is still unclear as the extent of effects on the economy, how quickly the economic landscape improves, the amount of bad debt still unrealized, the ultimate cost of bad regulation or inefficient stimulus, and the timing of the return of investor confidence (or at least the timing of the removal of less than fully rational fear) is still uncertain, but things look promising.



Deleveraging: History suggests that severe financial crisis are usually followed by long periods of debt reduction⁷. Credit falls relative to the size of the economy, and in the United States, consumer credit has fallen for 10 consecutive months prior to 2010. This is the largest and longest drop in history.

A report prepared by McKinsey Global Institute examined how much credit was likely to fall, and where the risks of contraction were greatest. Much of the world piled up large debts in the past 10 years. However, the risks and excesses appear to be concentrated rather than economy wide. Because of this, debt reduction will vary quite a bit by sector and country.

Historically, 32 examples of sustained deleveraging (defined as three consecutive years in which ratios of total debt to GDP fell by at least 10%) in the aftermath of a financial crisis were found. Sometimes the debt burden was reduced by default and other times by inflation. However, the most appropriate points of comparison (about half of the cases) showed deleveraging through an extended period of belt tightening where credit grew more slowly than output. Typically, deleveraging began about two years after the beginning of the crisis and lasted for about six to seven years. Output typically shrank for two to three years at the outset.

There are several reasons why McKinsey Global feels that the current crisis could be more protracted. The scale of the indebtedness is higher, and the number of countries afflicted simultaneously means that rapid expansions of exports, which have supported output in the past, are harder to achieve. Finally, big increases in public debt increase the overall debt reduction that will eventually be needed.

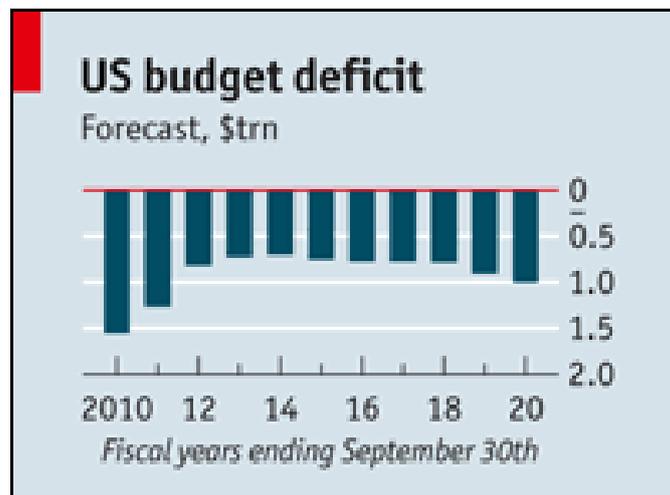
However, these same general concepts would have suggested that the current world financial crisis would be more protracted than it has so far proven to be. McKinsey Global appears to be

underestimating the resiliency of the current economic markets, strengthened in part by more advanced financial systems and a more coordinated and rapid response to crisis, relative to what was more common in the times of the past crises. Sustained belt tightening will certainly be in order, but it will more likely follow the trend of the current financial crisis, somewhat shallower and less painful than what history has shown us in past years (on a global average basis).

3. EXIT STRATEGIES FOR THE WORLD FINANCIAL CRISIS

The United States Budget Deficit: The GDP in the United States has returned to positive territory two quarters in a row, which when added to the slightly improving unemployment figures and equity market strengthening do reasonably support that the country is working its way out of the crisis. These factors have proven to be the lead indicators of recovery based on a comparison of other financial crises throughout world economic history.

Despite this, the United States forecast budget deficits remains worryingly high. Especially troubling is the expectation that budget deficits will fall until 2018, at 3.6% of GDP, and then start to rise again⁸.



The reality is that the budget needs to be trimmed back to a sustainable level (say 3% of GDP) and given the economic and demographic trends that will impact the world over the next several decades, achieving this over the medium term is optimal. Taxes will have to rise, and/or benefits and services will have to be scaled back. With Universal Health Care a reality in the United States, this gives the government another lever by which it can control the economy (hopefully it will be used prudently). Stiffer increases in taxes will unquestionably be required over the medium and long term. Lastly, despite defense spending being the last cut that the United States government wants to make in these troubled times, it too will probably have to be scaled back to make long term economic growth and stability a reality. The expected rise in economic power of China, Russia, and India over the medium and long term could be a boon in this regard. It could allow the United States to scale back their world

political and military intervention efforts by passing some of these debatable responsibilities to the other major growing world powers.

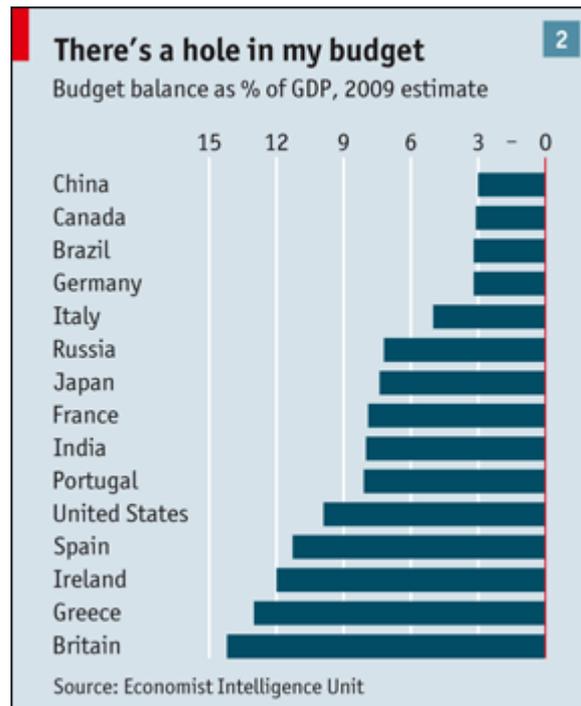
How and When to Withdraw World Economic Stimulus: The world economy has had a vast injection of cash stimulus, central banks have cut interest rates to the bone, and quantitative easing has been employed in some of the largest world economies⁹.



These infusions have prevented the biggest financial burst since the 1930's from becoming a worldwide catastrophe. Banks have been generally stabilized, production is up, asset prices are rebounding, and with only few exceptions it appears that the global recessions will not become a depression. This is evidenced by the fact that every large economy in the world has stopped shrinking and slow growth is now, albeit with some economic sputtering, the worldwide expectation.

Large emerging economies are growing briskly again, but rich ones are still quite fragile and prone to a relapse if fiscal and other stimulus is removed incorrectly (too quickly or in the wrong manner). A potential asset bubble in China, some very fragile economies in Europe, and a still weak or weakening real estate market in the United States are some clear examples that the world has not fully recovered.

Budget deficits have risen to an average of around 9% of GDP, and public debt has shot upwards. This may not be surprising and was likely required, but does leave little fiscal room for maneuvering in some countries (Greece, Portugal and Spain are good examples).



This leaves us with the questions of: when do we begin to fiscal belt tightening, do we cut budget deficits or raise interest rates as the primary methodology, and how will central banks go about tightening monetary conditions?

Regarding timing, policy makers should avoid making strong moves too soon. It is safer to allow stimulus and cheap money to run a bit longer than the risk of killing the fragile recovery by pulling back support too much and too soon. As such, some budgetary difficulties and inflation are likely with a cautionary approach to weaning the public off of fiscal stimulus. Emerging markets where the recovery is more clear face an easier decision, as do rich countries that did not suffer greatly from the crisis. Fiscal tightening has and should be moved rather quickly in these countries where the risk is minimal (Australia, Israel Norway and China have all begun this tightening and Brazil, Mexico and India have plans to cut their deficits this year).

In some big rich economies where the crisis hit harder the unwinding has been and should be slower as the growth and recovery is more fragile. Emergency liquidity facilities are being shut down, the Federal Reserve closed 5 of 7 crisis lending windows on February 1, 2010, and the European Central Bank has stopped lending banks unlimited 12 month funds. Additionally, currency swap lines between central banks have been closed down with quantitative easing also being slowed down with the United States to probably stop its purchase of mortgage-backed securities in April 2010 and the Bank of England stating that it would buy no more gilts on February 4th 2010.

Fiscal policy has been less consistent with continued stimulus or ongoing previous policies beginning to have greater effect in some countries (the United States, Japan and Germany are some examples). Other countries have had tighter policies for 2010, either forced on them or by choice. Some examples of these countries are Greece, Portugal and Spain. This forced austerity is partially due to membership in the euro zone since the option of devaluing their currency is off the table. The average ratio of public debt to GDP in big rich economies has risen from 80% to nearly 100% in two years, and the IMF is forecasting that it could grow to 120% by 2014. Large emerging economies are likely to see their ratios decline and the relative risk of the rich world will increase due to these factors. It remains to be seen if this will have a perceptible effect on their relative bond yields. Despite this, the rich world economies have taken the safe route to recovery from the financial crisis, and this is just one of the unfortunate side effects of the bitter medicine. Tighter domestic policy may also squeeze budgets as, for example, 60% of Americans think that deficit reduction should be the government's main economic priority.

Based on these factors, there are two basic schools of thought. The dominant one espoused by the IMF and G7 finance ministers feels that when the risks are considered, it is generally too soon to tighten budgets in 2010. The smaller second group argues, Keynesian deficit spending has played out its benefit already and that a serious attempt to tighten deficits would raise consumer confidence which would in turn counter the drag from the lesser government spending. The European Central Bank (and British conservatives) espoused this plan as they tend to want faster fiscal stability in the euro area despite the somewhat higher risk that would entail. This author generally agrees with the first group, excepting those European countries further from the center of the crisis. At most, any fiscal tightening should be modest for the still fragile economies to forestall a large change in consumer confidence and bond yield adjustment.

This does tend to suggest where fiscal tightening should begin, if not exactly when. Small open economies (like Greece or Ireland) gain relatively little from looser fiscal policy as a great deal of its effect spills overseas, and they will suffer more with a drop in investor confidence. Countries with heavy debt (Italy), those whose tax base has been severely damaged (Ireland and Spain), and those with very large starting deficits (Britain) and those that took a major hit to their long term prospects (Spain again) should certainly be more concerned with drops in investor confidence than those with smaller deficits (Germany), better demographics (United States), or a reserve currency (United States again). Because of wide disparity in underlying economic and fiscal positions and prospects, the timing and optimal mix of fiscal belt tightening will and should vary considerably.

Eventually though, all big rich economies will be forced to prudently cut their deficits for a prolonged period. The amount of fiscal tightening that is appropriate will depend on several factors such as the optimal debt ratio, investor perceptions, consumer confidence levels, changes in worldwide security levels over time, the size of their current deficits, how fast they are currently growing, and what interest rates they face. Higher debt burdens lower long term growth prospects.

Stabilizing debt ratios of the big economies at 2014 forecast levels will require an average improvement of about 4% of GDP in their primary budget balances (revenue minus spending, excluding interest payments). To bring the debt to GDP ratio back to 60% would likely require an improvement closer to 8% of GDP. However, there is some doubt that a 60% ratio is required in today's financial landscape and the negative effect of higher ratios seems to gather steam after 100% (hence, a decrease to leave room for maneuvering in the face of future economic shocks is certainly prudent but a decrease back to 60% is probably not necessary in most rich countries). In recent past decades, 10 rich countries have improved their budget balances by over 10% of GDP in short order, but so many countries attempting similar improvement may make this situation harder to achieve in the present day. Additionally, in these past examples, these large changes were not performed when interest rates were already near zero. This time it will be harder. The likely blend of monetary and fiscal policy will have to contend that there is very little room for cheaper money in their prescriptions.

Carefully considered budgetary tightening, allowing central bankers to step up rates from their current near zero positions is a prudent move. Those countries that have employed quantitative easing now have two methods by which they can take modest tightening measures, short term policy rates and the size of their balance sheets.

Public-sector Finance: A side effect of the recovery from the world financial crisis is a vast rise in government deficits¹⁰. Spending cuts will and should be the preferred method of tackling this problem but increases in tax rates will also surely be needed. Coupling this with the effects of deteriorating demographic situations for much of the world (a decrease in the worker base will be a limit to economic growth in many countries over the coming decades), and the need for tax increases will be a surety, with the only question being when and how much. The economic consequences of raising taxes will vary greatly based on the scale of the increases, how efficiently it's performed and what sectors of the population base is most affected. The size and structure of taxation varies greatly among advanced economies and their emerging counterparts. Because of this, and the certainty of higher taxes in many countries over the coming decades, a comparison of taxation methodology can be a useful exercise.

On top of the world													
Government taxation, 2007													
	Advanced economies									BRICs			
	Australia	Britain	Canada	France	Germany	Italy	Japan*	South Korea	United States	Brazil	China*	India	Russia
Total revenue[†], % GDP	35.9	41.8	41.4	49.6	43.8	46.4	34.5	33.6	33.7	34.8	18.1	22.3	47.7
Total tax, % GDP	29.5	37.7	34.8	44.7	40.4	43.0	28.2	28.7	28.0	32.3	16.4	18.9	33.2
Total tax, \$bn[‡]	268.5	1,055.6	496.7	1,161.2	1,344.6	910.5	1,230.2	301.1	3,941.7	430.7	435.9	207.8	429.7
Structure, % of total tax													
Income and capital**	59.2	37.8	49.9	23.4	30.9	34.2	35.4	37.6 [†]	48.3	32.3 [†]	28.4 [†]	47.7 [†]	26.0
<i>people</i>	37.5	28.7	36.2	16.7	23.5	26.7	18.5	19.6 [†]	37.5	<i>na</i>	7.4 [†]	17.1 [†]	<i>na</i>
<i>companies</i>	21.2	9.1	12.4	6.6	3.4	7.5	17.0	17.9 [†]	10.8	<i>na</i>	21.0 [†]	30.7 [†]	<i>na</i>
Employment	4.5	<i>nil</i>	1.9	2.7	<i>nil</i>	<i>nil</i>	<i>nil</i>	<i>nil</i> [†]	<i>nil</i>	6.0 [†]	<i>nil</i> [†]	<i>nil</i> [†]	9.5
Property	9.1	12.0	9.7	10.2	2.1	1.9	9.1	4.4 [†]	10.9	0.1 [†]	0.9 [†]	0.1 [†]	<i>nil</i>
Goods and services**	25.4	28.1	22.4	24.1	26.2	28.7	18.6	30.3 [†]	15.6	25.3 [†]	64.9 [†]	34.1 [†]	24.2
<i>consumption</i>	13.2	17.0	13.7	15.7	17.0	14.1	9.2	20.7 [†]	7.6	<i>na</i>	49.0 [†]	0.2 [†]	<i>na</i>
<i>excise</i>	7.4	8.5	4.4	4.5	6.5	4.8	7.4	9.6 [†]	3.5	<i>na</i>	15.3 [†]	23.8 [†]	<i>na</i>
Other	1.8	<i>nil</i>	1.0	<i>nil</i>	<i>nil</i>	4.4	<i>nil</i>	9.4 [†]	0.7	11.5 [†]	5.8 [†]	18.0 [†]	22.0
Social contributions	<i>nil</i>	22.0	15.0	40.2	40.8	30.8	36.6	18.3 [†]	24.5	24.9 [†]	<i>nil</i> [†]	0.2 [†]	18.3

Sources: CEIC; IMF; OECD; National statistics offices *2006 data †Taxation plus other government income ‡At market prices **Sub-categories are not exhaustive †Central government only

The state is largest in France with almost 50% of GDP, almost 48% in Russia (which includes oil revenue), and 46% in Italy. Contrasting, the United States has one of the lower rates among the advanced western economies of almost 34%, and 18% in China and 22% in India, theoretically allows for more room for tax increases as deemed necessary. Taxes create the mass of government revenue but some state owned enterprises also contribute significantly. Oil proceeds in Russia for instance are about 16.5% of GDP.

Anglo-Saxon countries tend to rely most on income taxes, while most European countries rely more upon payroll taxes, direct taxes on spending and social contributions. France and Germany get approximately 40% of their tax base from social contributions and about 25% from expenditure taxes like VATs. That contrasts with the United States that gets only about 17% of its tax base from expenditure taxes. China and India raise more money through indirect taxes than any other big economies with China having over 60% of its taxes from these sources.

Which of these in combination is more effective for economic growth? Theoretically, expenditure taxes are better than income taxes because they do not have a negative impact on savings. Flat tax rates on a broad base are less distortive than high marginal rates on a small base. Taxes on long lives and immobile items like real estate tend to be less distortive than taxes on mobile economic units like firms. A flat rate on final goods is less distortive than many excise taxes as it affects spending decisions less. This is supported by a study performed by Jens Arnold of the OECD. He concluded that property taxes followed by consumption taxes were the least damaging to growth (the study was of 21 rich countries over the 1970 to 2004 period). Income taxes (especially on firms) were the least friendly. As such, a significant savings in GDP might be accomplished with shifting the way taxes are collected. The United States tax system stands out again as one of the least efficient by these measures, despite the ratio to GDP being one of the lowest of the rich western economies.

Of course, tax systems are not just about efficiency. Real estate taxes may be non-distorting but they tend to be unpopular, and VATs tend to fall heavier on the country's poor. From this measure, the United States has a fairly progressive tax system as the reliance on income tax allows higher proportions of the tax base to fall on the upper income bracket. Political reasoning and concepts of fairness often play as big or bigger role than efficiency in tax decisions. However, with the current and coming budgetary squeeze, the importance of efficiency is gaining power, and so maybe the mix of taxation methodology deserves another round of consideration.

4. REAL ESTATE MARKETS

The worldwide slump in real estate prices, although lagging the world recovery somewhat, has or is threatening to enter positive territory again. Housing prices increased in 6 countries up to the end of 2009, and even in the United States, housing prices have wobbled across 2009 with little actual change in average home prices between February of 2009 and February 2010.

The markets are now stabilizing and it appears that the world housing bubble has or is corrected itself. A study of the ratio of rents to long run average home prices was performed by the Economist to determine what markets had generally erased the effect of the bubble. The analysis was much like a stock p/e ratio and focused their long run averages. Housing shares are considered pricey if they are above their long run averages*.

Because housing decisions are not as income sensitive as equity markets, this type of analysis is really just a general yardstick. Additionally, this study does not take into account changes in real interest rates, which would cause some markets to appear over priced when in fact there was just an underlying financial change. Additionally, this study is sensitive to how far back the underlying data goes. However, it is an interesting measure and the broad statistics may prove a useful point for further analysis.

The Economist house-price indicators

% change

	Latest	Q3 2008	1997-2009*	Under(-)/ over(+) valued†
	on a year earlier			
Hong Kong	13.9	18.5	-20	+52.9
China	8.0	5.3	na	+2.2
Australia	6.2	1.4	181	+50.0
South Africa	4.8	2.5	418	na
Switzerland	4.1	3.7	28	-9.0
Britain	2.7	-10.4	175	+28.8
New Zealand	1.0	-6.7	101	na
Sweden	-0.4	1.8	152	+34.7
Canada	-2.1	1.8	65	+20.6
Germany	-3.9	-0.5	na	-15.2
Japan	-4.0	-1.8	-36	-33.7
United States (FHFA)	-4.1	-3.9	75	+14.0
Italy	-4.1	2.7	96	+15.0
United States (Case-Shiller ten-city index)	-6.4	-17.9	98	+3.3
Netherlands	-7.1	nil	87	+21.2
France	-8.0	0.8	132	+39.8
Spain	-8.0	0.4	167	+55.1
United States (Case-Shiller national index)	-8.9	-16.4	64	-3.1
Singapore	-11.0	8.3	-4	na
Ireland	-13.9	-10.0	159	+29.8
Denmark	-16.4	-4.6	89	+18.4

*Or most recent available figure †Against long-run average of price-to-rents ratio

Sources: ABSA; ESRI; Hypoport; Japan Real Estate Institute; Nationwide; Nomisma; NVM; FHFA; Quotable Value; Stadim; Swiss National Bank; Standard & Poor's; Thomson Reuters; government offices; *The Economist*

Interactive: Compare countries' housing data over time at:
Economist.com/houseprices

Several notable countries stand out. First, it is interesting to note that the United States appears, by this measure, to be very close to its long term average. This is a promising sign and it is supported by wobbly but generally steady prices on average in the last 12 months. On a less positive note, Hong Kong, Australia, and Spain all seem to still have worryingly high figures.

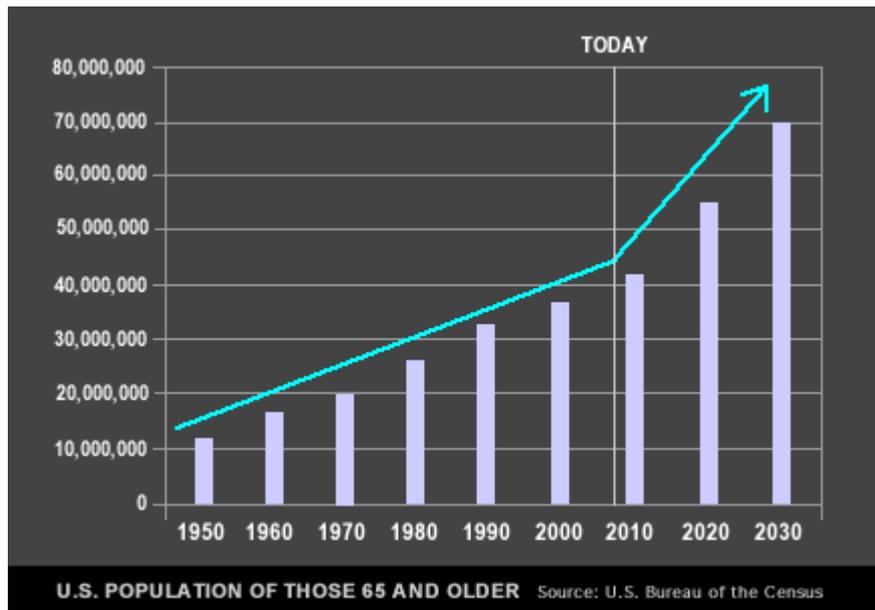
5. LONG TERM ECONOMIC TRENDS - AGING POPULATIONS, SOCIAL SERVICES, COSTS, INFLATION AND ENERGY

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 over the coming 20 to 25 or so years, the working percentage of these countries will significantly decrease. This will negatively impact GDP in these nations. This will also be coupled with an increase in the cost of social services, magnifying the downward affect of a smaller workforce. The most likely response to this downturn will be a higher taxes to fund increased need for social services, and governmental / social emphasis on keeping the population as healthy and productive as possible for as long as possible. This will very likely include decreasing public services and increasing typical retirement age to minimize both of the negative factors of greater social costs and a smaller workforce. Immigration supporting a younger workforce can also help offset this factor.

These somewhat disturbing figures are reflected in the labor statistics around the world. For instance, in Europe there are 4.4 persons of working age per one person over the age of 65. By 2025 this will decrease to 3.1 (29.5% drop), and by 2050 this is forecast to decrease to 2.1 (a 52% decrease). This author is a bit skeptical on the magnitude of that forecast change but it is undeniable that the work force will greatly decrease over the coming several decades. This factor, exacerbated by a growing social services burden will change the economic landscape of the world.¹⁴

Unfortunately the coming shortfall of skilled workers is even worse, especially bad in Germany and parts of southern Europe. In Japan the population of those aged 65 and higher has climbed from 13% to 21% in the 1996 to 2006 period. The demographics in the United States are somewhat more favorable than much of the developed world but also indicate a shrinking work force as a % of the population. On a positive note, the "echo boomers", children of their baby boomer parents will be entering their child bearing ages of 25 to 44 over the coming decade, fueling increased demand for housing and the rental market. This will tend to reinforce the financial recovery until the boomers leaving the work force, requiring substantial social services begin to outweigh the echo boomers boon of entering the workforce and housing markets.



Source: U.S. Bureau of the Census

The hard facts of demography will have a wrenching effect on the balance of world economic power¹¹. Aging is not a severe issue for less developed nations (except for China). The United Nations projects that the developed nations will fall to 15.2% of the world population by 2030 from the 18.3% in 2006 (a relative 17% decrease).

By 2030 the UN predicts that by 2030 people sixty-five years of age or older will account for 23% of the adult population, compared to 16% in 2006. This huge population shift will expose the world's financial retirement systems to a stress test for which there is no precedent.

The United States Social Security system calculates that it will take an increase of 2% in payroll taxes (in 2006) or have a decrease in benefits of 13% (or some combination) to fund the shortfall over the next 75 years. However, this does not cover the entire picture. Medicare A is a much bigger problem and an increase of 3.5% of payroll taxes would be required (as of 2006) or an immediate halving of benefits to get the same 75 year solvency. Medicare B and D would require an additional 3.5% increase in payroll taxes. The total of all of these increased costs in the United States would be approximately 9% had they been in place in 2006, more today. Much of the developed world and especially Europe face even more severe challenges, have much higher average tax rates already, or are already deeper into their demographic curves.

The world will need to boost savings rates, control social services costs and have the elderly populations work additional years, at least part time, to help reduce the additional burden on the traditional working age group, who will surely see a higher tax burden as well. Other possibilities are rescinding benefits to the most wealthy, private accounts, rationing, increased productivity, technology increase, mandatory higher retirement ages, cuts in promised benefits and more favorable immigration policy. Some of these possibilities are decidedly unpopular and others will have only a negligible positive effect but the problems facing the world

economy due to this demographic shift will be large and uncomfortable no matter which direction an individual country decides to move.

As the world begins to retire we continue to question, can it afford to? The simple answer is, it will find ways. The world has no choice. Demography is Destiny¹¹.

Inflation: With the fall of many central planned economies around the world, and the emerging private markets in developing economies, a massive amount of low cost labor has saturated the market, depressing the cost of goods as wages to these workers increase. As these developing countries strengthen economically, wages and costs will increase, returning more inflationary pressure to the globe. These effects are already underway and will intensify over the coming decades and inflation will creep back into the western and rich world markets again.

Energy Need, Oil, Natural Gas and the Environment: Oil prices have been shifting upward since 2002. Increases in global consumption have progressively shrunk the buffer between excess capacity and demand to a far too thin layer. As it currently stands, any even moderate disruption in supply can cause wild price shocks and spikes in prices. This problem will only be exacerbated by China and India's growing demand for oil as their economies strengthen and put more automobiles on the road. This is also true for the remainder of the emerging economies of the world. Expected increases in demand from natural economic growth in these regions will utterly remove any remaining buffer between capacity and demand, in the absence of very significant production growth. This rapid growth has not been evident and the oil producing parts of the world and major oil companies had better consider the consequences of not meeting the rising demand needs. However, alternatives to oil are more readily available than most people think.

Historically, despite predictions that the world was running out of oil, verifiable recoverable petroleum reserves belowground grew in line with oil consumption between 1986 and 2006¹¹. This was mostly due to technology improvement that improved yields from existing reservoirs. Drilling and well completion fell behind as countries with large reserves (mostly OPEC) did not reinvest enough capital in wells and crude-oil processing facilities to meet the rising demand. As such, oil consumption and reserves rose by 1.6% per year from 1986 to 2006, crude-oil production capacity grew by only 0.8% per year.

There was a time when the Seven Sisters (private energy giants) controlled much of the world's oil. Today these companies are mere shadows of their former greatness and have very limited access to new reserves. With the exception of Saudi Aramco, none of the OPEC national oil monopolies had professed a desire (prior to the financial crash) to contain oil price increases by expanding crude-oil capacity. In actuality, they had seemed more concerned with the reverse and that increase in capacity would bring down oil prices and the revenues they generate. OPEC is and should be quite concerned that if prices rise too high, or if alternative forms of energy become cost effective and readily available, a permanent decrease in consumption may well cause a huge decrease in their revenue.

Most oil is consumed by automobiles, fleets, factories, and homes. The consumption patterns of these sectors can't change quickly but they can, do, and even are changing. The United States currently consumes about 25% of the world oil. A major shift, say a vast increase in the use of natural gas (starting with trucking fleets), or a shift from petroleum to electric (powered by off peak non-petroleum sources), smaller, natural gas and/or hybrid automotive sources could very significantly decrease American reliance on petroleum.

Price shocks due to the inadequate buffer between supply and demand will hasten the day when the world (most especially the United States as the largest consumer) will wean itself off its dependency for predictable stability if nothing else. Additionally, the adequacy of the world's refining capacity is also worrisome. Refining capacity increased at 0.9% per year over 1986 to 2006, only slightly faster on average than that of capacity. This problem has also been made worse by a mismatch in demand and supply for light sweet crude and heavier crudes, as they relate to the existing refining capacity and environmental requirements for any new facilities in much of the western world.

Oil efficiency around the globe has been one of the main stabilizers on price. This is especially true of the world's rich countries where smaller vehicles, tougher government regulations, more efficient engines, and better insulation have partially offset greater world demand. Because of this, oil use is less than 66% as important an input into world GDP than it was in the 1970's.

New reserves outside of the OPEC areas have proved more costly to extract and are generally smaller than they have been in prior years. Increases in technology have been insufficient to counter this trend. Approximately 75% of the world's proven reserves are in OPEC territory, and 60% are in the Middle East.

Compared to oil, the common use of natural gas is fairly new. In recent decades natural gas production has surged into a major source of energy as many of the technological hurdles have been passed. Additionally, it is a relatively clean source of energy and in today's environment this makes it particularly attractive. In 2005, natural gas supplied nearly 60% as much energy as oil¹¹. In contrast to oil, natural gas used in the United States is almost sole produced in the United States, and many reserves are located through the rich developed world. Despite this, natural gas is still somewhat difficult to store and transport. The role of natural gas is increasing and this trend is very likely to continue.

In the more distant future, the technology to convert productive capacity from natural gas in hydrate form will be another revolution. Located in marine and arctic sediments, these ice-like structures hold immense amounts of methane. Estimates from 2006 suggest that the United States alone has over 200 quadrillion cubic feet of natural gas in hydrate form. Total world estimate reserves of natural gas is on the order of closer to six quadrillion cubic feet.

Additionally, nuclear power is generally much safer than public opinion places it (and cleaner) and its role will probably expand over the coming generation. Unfortunately, the same can't

be said for hydro electric power, solar, and wind generation which are only a small fraction of energy usage and are generally only efficient in specialized areas.

Cap and Trade and Global Warming, and Economic Perspective: The effectiveness of the cap and trade mechanism depends on the size of the cap, as does the economic impact it has on business. All economists will applaud the “trade” portion of this system, however, the “cap” portion is where the problems will lie. In 2005 the European Union implemented this program only to find the cap was too high to have significant impact. In 2006 the European commission reported that the original 15 members would cut emissions by 2010 by only 0.6% compared to 1990 levels. The Kyoto Protocol called for a target of 8% by 2012.

There is no effective way under current technology (a huge shift to natural gas or nuclear might be more effective) to significantly reduce emissions without negatively impacting a large part of the economy. In the end it becomes a tax as the system, if set to an effective cap level, the world will experience cost increases which will result in job losses. It isn't easy for a national leadership body to impose a tax like this upon their citizens when the benefit is spread around the globe equally. Worse than this, emerging economies flat out won't be able to afford to make these cuts and any benefit from controlling emissions in the rich world will be more than offset by these large emerging economies that won't be able to afford these changes for decades to come. Consider the over 2.5 or more billion people in China and India alone and the effect of these economies growth will have on emissions over the next couple of decades. The argument from the developing world will be that why must they agree to be bound economically after the developed nations reaped the benefit of cheaper and dirtier growth?

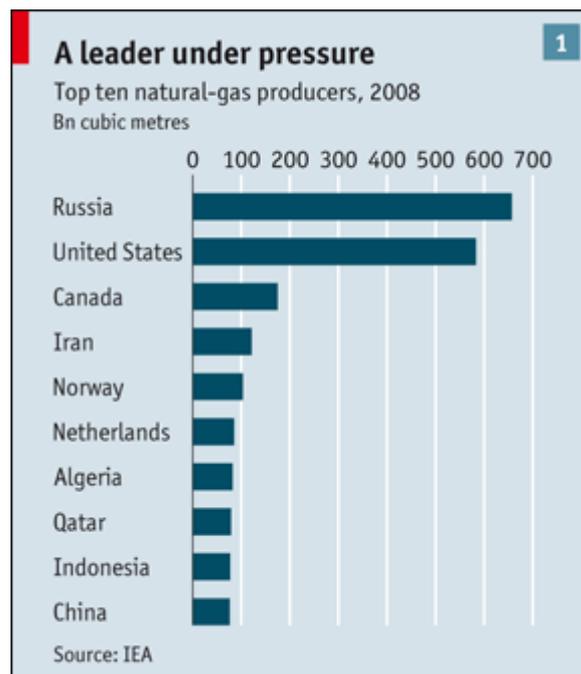
A much more effective approach to cap and trade would be to delinked from production technologically, rendering cap and trade unnecessary. However, this is unlikely to result in an optimum allocation of resources and will as such, encounter resistance and friction, as well as cost and competitive consequences. Unfortunately, the likely outcome is a continued impotent discussion of dangers, costs, politics, and environmental issues until it begins to pose a real danger to national economies, and remediation will be more likely than prevention. This has the final benefit of the cost being borne by those receiving the benefit but the cost might then be wildly higher as the damage may also be. Once again, reliance upon cleaner fuel technology could certainly be a significant boon, and one that may actually be in place in our lifetime.

Oil production is expected to peak by mid century but before then, cheaper and cleaner alternatives are likely to have begun to displace it to a greater and greater extent. For instance, in the United States, based on the current electrical grid, 84% of the 220 million light vehicles could be charged over night if they were plug in hybrids when electrical usage is low. A expansion of electrical capacity could raise this figure even higher. Natural gas vehicles, truck fleets or natural gas hybrids are another realistic possibility.

The developing world is less efficient energy wise as a share of GDP than the developed world. Coupled with this, a greater share of world GDP will continue to be shifted to the

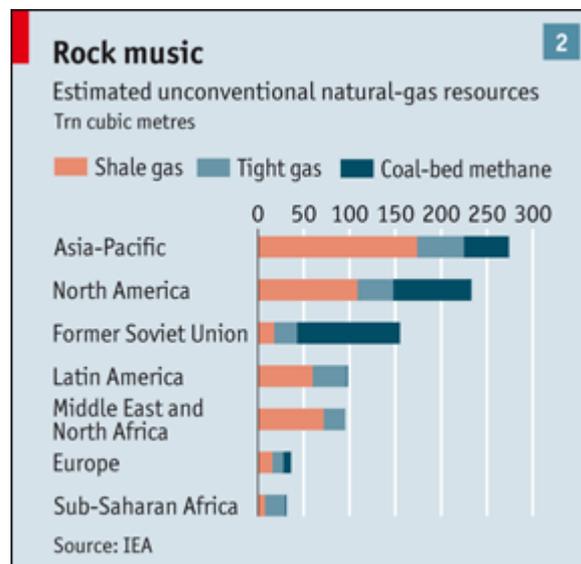
developing world as they have the advantage of adopting existing technology (the developed world has to typically innovate new technology to advance), demographics (the developing world is on average much younger), and productivity shifts through free market capitalism. Considering this, the International Energy Agency has forecast petroleum consumption growth at 1.3% per year between 2005 and 2030. However, this growth is double what OPEC the annual increase in capacity, and it is unknown if OPEC is willing to meet this forecast rise in demand. One thing is certain. Change in the energy patterns across the world will gather steam over the coming decades and the landscape of geopolitics will also change.

The Economics of Natural Gas: Much of the prior discussion regarded natural gas technology prior to 2006. The potential for natural gas as a major source of energy is growing even faster than had been previously forecast. Some countries, the United States included, may be able to dream of a day of energy self-sufficiency based on natural gas beneath their feet. Geopolitics is certainly changing. A technique called "fracing" has unlocked vast tracts of gas-bearing shale around the world (especially in the United States). Production costs have halved with new technology making it cheaper than even some more conventional sources. The world benefit is that at some point, as the cost of oil increases or continues to destabilize, there will be (or at least could be) an ever increasing shift to natural gas. One authority on the subject states that conservatively the supplies will last 100 years, and that is probably too conservative.



Russia was the world's largest natural gas producer in 2009 and the United States will probably overtake it. Prices in North America have fallen over 60% between 2008 and 2010. Because shale rock is common around the world, there is no reason to assume that the success in the United States could not be duplicated elsewhere. The amount of available natural gas

estimate to be available worldwide is staggeringly immense. It will take at least a decade for production in Europe to make a major difference and changes in infrastructure will need to accompany the change in energy sources, but the potential is comfortingly massive.



6. THE AFTERMATH OF THE CURRENT FINANCIAL CRISIS FOR THE UNITED STATES

The world is undergoing a financial crisis with real estate values, mortgage backed securities, and real estate lending being seen as the key underlying factors behind the inception of the crisis. Stabilization in real estate property values will be a cornerstone to a world financial recovery. The financial instruments based on real estate, the availability of funds, and the stability of lending institutions will all improve in performance after real estate values stabilize and become relatively predictable once again.

As such, it would be remiss in any analysis of the current world financial crisis to gloss over the historical lessons learned from similar crises throughout history. An excellent and timely piece on this subject was a paper written by Carmen M. Reinhart, University of Maryland, and Kenneth S. Rogoff, Harvard University, titled *The Aftermath of the Financial Crisis*. The major concepts will be discussed in depth and charts reproduced herein as this is the likely economic environment in which real estate and real estate related instruments will perform in over the coming years.

As of 2007, standard indicators for the United States, such as asset price inflation, rising leverage, large sustained current account deficits, and a slowing trajectory of economic growth, exhibited virtually all the signs of a country on the verge of a severe financial crisis.¹⁵ The following section will show a similar comparative historical analysis that is focused on

the aftermath of systemic banking crises. The breadth and depth of this current crisis will affect real estate values and real estate related instruments as the financial markets adjust.

In the following analysis, should the financial crisis performance of emerging economies be considered? The United States is a highly sophisticated global financial center and is at the center of the current world financial storm. What can advanced economies possibly have in common with emerging markets when it comes to banking crises? In fact, as Reinhart and Rogoff (2008b) demonstrate, the antecedents and aftermath of banking crises in rich countries and emerging markets have a surprising amount in common. There are broadly similar patterns in housing and equity prices, unemployment, government revenues and debt. Furthermore, the frequency or incidence of crises does not differ much historically, even if comparisons are limited to the post World War II period (provided the ongoing late-2000s global financial crisis is taken into account). Thus, this study of the aftermath of severe financial crises includes a number of recent emerging market cases to expand the relevant set of comparators. Also included in the comparisons are two prewar developed country episodes for which housing price and other relevant data was available.

Broadly speaking, financial crises are protracted affairs that affect many layers of the economic landscape. The aftermath of a severe financial crisis typically shares three characteristics.

First: Asset market collapses are deep and prolonged. Real housing price declines average 35 percent stretched out over six years, while equity price collapses average 55 percent over a downturn of about three and a half years.

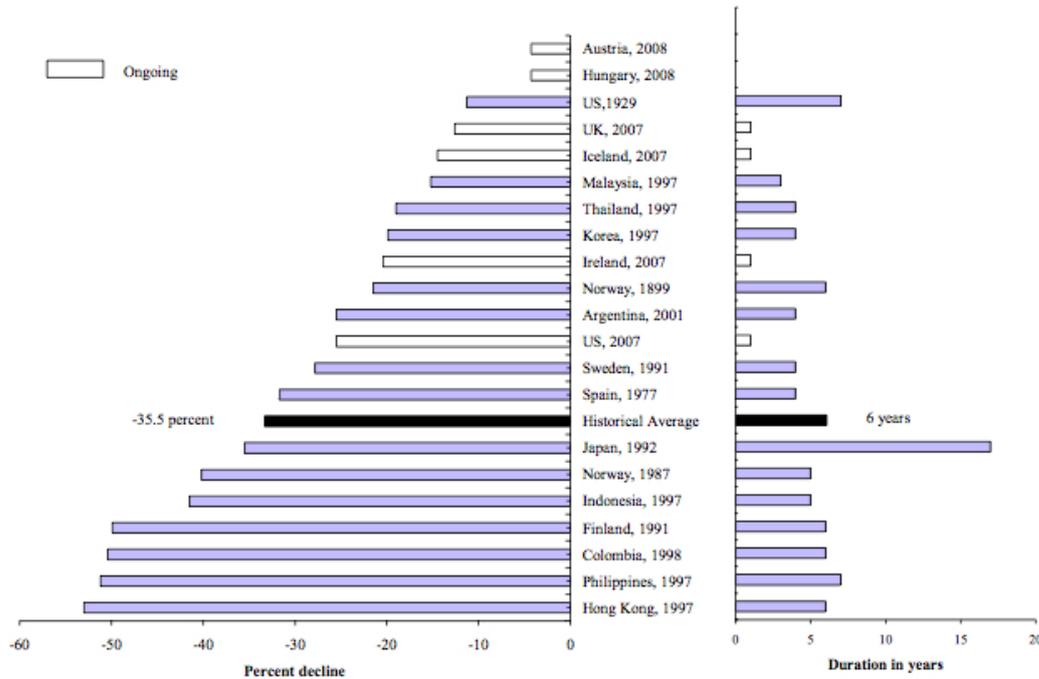
Second: The aftermath of banking crises are associated with profound declines in output and employment. The unemployment rate raises an average of 7 percentage points over the down phase of the cycle, which lasts on average over four years. Output falls (from peak to trough) over 9 percent in GDP in roughly two years.

Third: The real value of government debt tends to explode, rising an average of 86 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. Rather, 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 ambitious counter-cyclical fiscal policies aimed at mitigating the downturn. 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.

On the following charts the slowing current crisis in the fore-mentioned countries will be compared to historical crises. A careful look at this data can allow forecasting, and foreshadow the likelihood that an individual component of the crisis will either be more or less severe, or more or less protracted than the historical average crises data. The implications of this will be discussed as we explore the individual financial components.

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 an average decrease from the average of 2006 to February of 2010 at 21.5%. NAR (National Association of Realtor data)¹⁷ shows a 0.8% decline in average home prices from 2006 to 2007, and a 8.76% decrease from 2007 to 2008, and a 13.3% decrease from 2008 to February 2010.² As such, it appears that the down turn for real estate began in 2006. Another survey, the Case-Shiller national index showed somewhat different results as noted in the above chart. As such, we are currently about 3 ½ half years into the real estate market decline and prices have wobbled around in 2009 but have remained almost exactly unchanged from February 2009 to February 2010 (up less than 1/10th of a %). However, the most recent 3 months have shown continued small decreases.

The speed in which the financing markets recover from the current crisis will have a strong effect on how steeply prices fall, and how long it takes to reach the bottom of the market. Currently, the continued constrained availability of credit has kept many purchasers from the market that otherwise have fairly strong credit and fairly good asset to debt ratios. The high

degree of fear and uncertainty has limited the buyer pool to those with high amounts of liquid cash, fairly low debt, and fairly spotless credit. This is making it difficult for a typical operator to finance a transaction even when all indications are that the sales price is at or even well below market. This impacts commercial transactions as well and there is the expectation that a wave of commercial foreclosures will roll over the market soon. This is particularly evident in the hotel, office, and retail sectors.

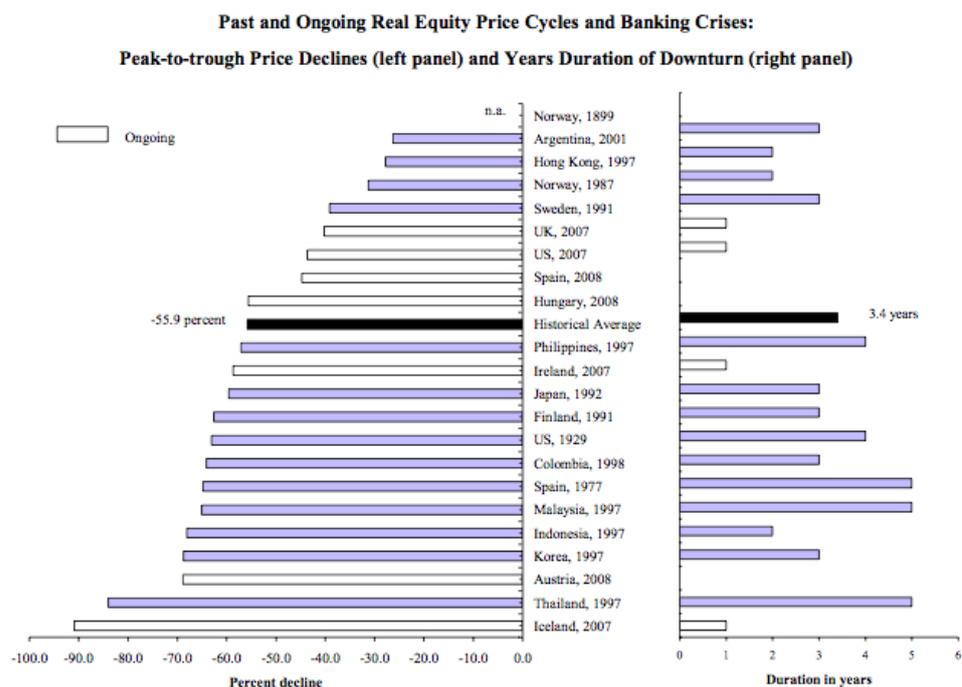
Real estate stabilization on average for the United States is generally forecast to begin (hit bottom) late in 2010 or early in 2011 (according to Kenneth Rosen, Fisher Center for Real Estate and Urban Economics, Berkley) and then begin appreciating at pre-bubble rates of 1-2% per year. This author tends to agree as real estate prices have historically recovered 0 to 2 years after GDP begins to increase (the lead indicator of most historical recoveries). GDP began to recover in 3rd quarter 2009 which makes the present to mid 2010 the likely range for the beginning of the recovery. So far, this indicator is inconclusive in determining if the current financial crisis is recovering ahead of schedule, or on schedule, with some slight indication (due to the wobbling nature of prices over the past year) of a slightly faster than historical precedent recovery.

Existing Home Sales													
Year		U.S.	Northeast	Midwest	South	West	U.S.	Northeast	Midwest	South	West	Mos. Inventory	Mos. Supply
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	10.4
2009		5,156,000	868,000	1,163,000	1,914,000	1,211,000	*	*	*	*	*	3,283,000	8.8
Seasonally Adjusted Annual Rate						Not Seasonally Adjusted							
2009	Feb	4,690,000	730,000	1,020,000	1,730,000	1,180,000	280,000	46,000	62,000	105,000	67,000	3,798,000	9.7
2009	Mar	4,610,000	710,000	1,030,000	1,730,000	1,140,000	357,000	52,000	81,000	135,000	89,000	3,648,000	9.5
2009	Apr	4,700,000	770,000	1,030,000	1,740,000	1,150,000	413,000	66,000	90,000	151,000	106,000	3,937,000	10.1
2009	May	4,750,000	790,000	1,090,000	1,750,000	1,120,000	447,000	71,000	107,000	160,000	109,000	3,851,000	9.7
2009	Jun	4,890,000	820,000	1,100,000	1,810,000	1,160,000	521,000	90,000	120,000	189,000	122,000	3,811,000	9.4
2009	Jul	5,140,000	890,000	1,200,000	1,920,000	1,130,000	532,000	105,000	127,000	190,000	110,000	4,062,000	9.5
2009	Aug	5,100,000	900,000	1,140,000	1,870,000	1,180,000	499,000	92,000	111,000	186,000	110,000	3,924,000	9.2
2009	Sept	5,600,000	960,000	1,290,000	2,080,000	1,260,000	468,000	80,000	110,000	176,000	102,000	3,710,000	8.0
2009	Oct	5,980,000	1,030,000	1,390,000	2,250,000	1,310,000	498,000	86,000	111,000	190,000	111,000	3,565,000	7.2
2009	Nov	6,490,000	1,150,000	1,540,000	2,380,000	1,420,000	471,000	79,000	106,000	176,000	110,000	3,521,000	6.5
2009	Dec	5,440,000	920,000	1,160,000	2,020,000	1,350,000	413,000	66,000	86,000	160,000	101,000	3,283,000	7.2
2010	Jan r	5,050,000	820,000	1,080,000	1,870,000	1,280,000	275,000	41,000	54,000	104,000	76,000	3,277,000	7.8
2010	Feb p	5,020,000	840,000	1,110,000	1,850,000	1,220,000	302,000	52,000	68,000	113,000	69,000	3,589,000	8.6
	vs. last month:	-0.6%	2.4%	2.8%	-1.1%	-4.7%	9.8%	26.8%	25.9%	8.7%	-9.2%	9.5%	10.3%
	vs. last year:	7.0%	12.0%	8.8%	6.9%	3.4%	7.9%	13.0%	9.7%	7.6%	3.0%	-5.5%	-11.3%
	year-to-date:						0.577	0.093	0.122	0.217	0.145		

Sales Price of Existing Homes													
Year		U.S.	Northeast	Midwest	South	West	U.S.	Northeast	Midwest	South	West		
						Median							
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		
2009		172,500	240,500	144,100	153,000	211,100	216,900	276,300	171,100	192,700	256,700		
						Not Seasonally Adjusted							
2009	Feb r	168,200	237,000	130,600	145,700	230,600	210,300	268,900	155,000	182,000	269,000		
2009	Mar	170,000	229,400	139,000	147,200	227,400	211,400	261,800	160,200	184,700	268,100		
2009	Apr	166,500	238,000	138,400	148,200	204,700	208,600	270,600	161,300	186,300	247,000		
2009	May	174,800	245,500	147,500	157,500	206,000	218,200	278,900	174,500	198,000	249,300		
2009	Jun	181,800	247,300	156,100	163,600	218,500	227,800	283,800	184,600	205,400	264,800		
2009	Jul	181,300	251,800	155,900	161,700	217,700	227,200	286,500	184,500	203,100	263,600		
2009	Aug	177,200	241,900	149,000	157,300	220,200	222,200	280,600	174,100	199,000	266,100		
2009	Sept	175,900	242,500	147,300	153,500	224,500	221,900	279,400	174,700	193,200	273,700		
2009	Oct	172,000	235,700	144,700	149,600	219,800	217,200	272,500	172,300	188,000	266,900		
2009	Nov	170,000	222,000	140,400	151,900	211,700	211,800	258,300	168,900	189,500	257,500		
2009	Dec	170,500	240,700	135,300	148,400	216,200	218,700	279,500	166,900	192,100	265,400		
2010	Jan r	164,900	245,400	130,100	139,900	205,000	212,200	284,500	162,500	180,600	256,900		
2010	Feb p	165,100	254,700	128,000	139,600	207,900	210,500	286,400	156,400	177,900	257,700		
	vs. last year:	-1.8%	7.5%	-2.0%	-4.2%	-9.8%	0.1%	6.5%	0.9%	-2.3%	-4.2%		

©2010 National Association of REALTORS®

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.

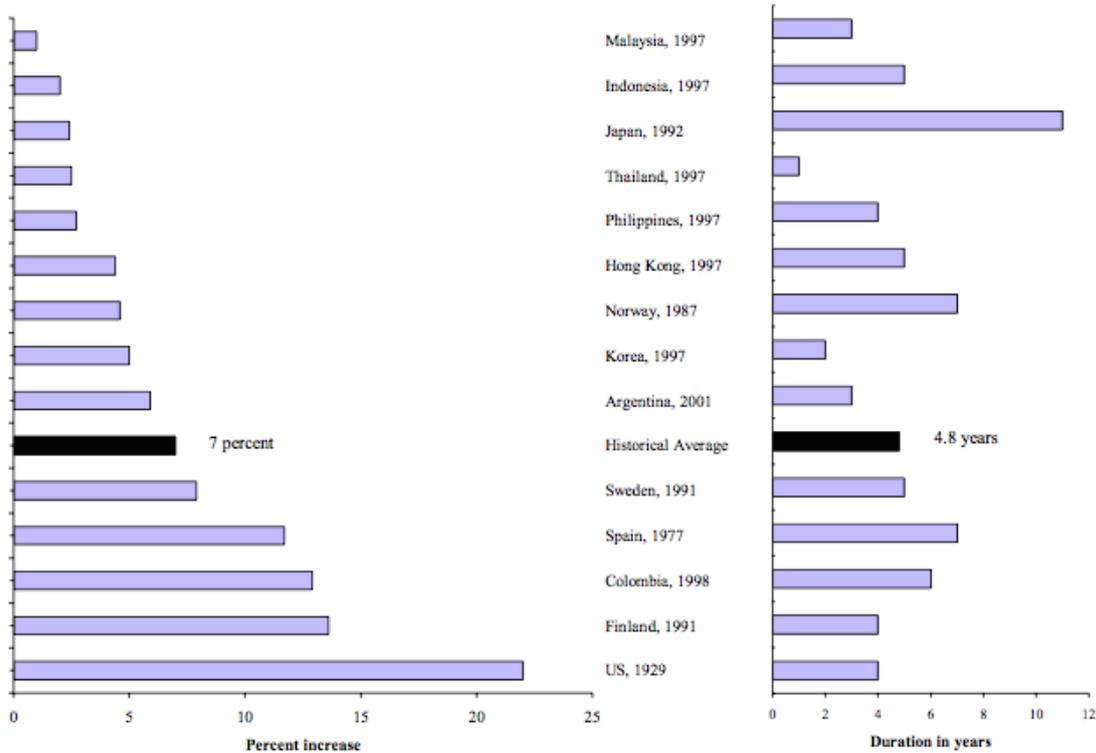
Equity price declines (stocks, bonds and related instruments) that accompany banking crises are far steeper than housing price declines, if somewhat shorter lived. The shorter duration of the downturn when compared with real estate prices is consistent with the observation that equity prices are far less inertial. The average historical decline in equity prices is 55.9 percent, with the downturn phase of the cycle lasting 3.4 years on average. The above chart shows equity declines for the United States to be above 40% in the first year of the down cycle. The following chart will show equity market prices over the 1999 to 2010 period for a longer view of the relevant trends.



The above 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 after approximately 18 months of the down cycle the markets began to recover and 2 and ½ years into it approximately half of the 40% drop has been recovered. It is also interesting to note that the United States equity markets shown here are at about their 2005 mark. This factor also tends to suggest a faster than typical recovery in this financial crisis, at least from the standpoint of equity.

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)



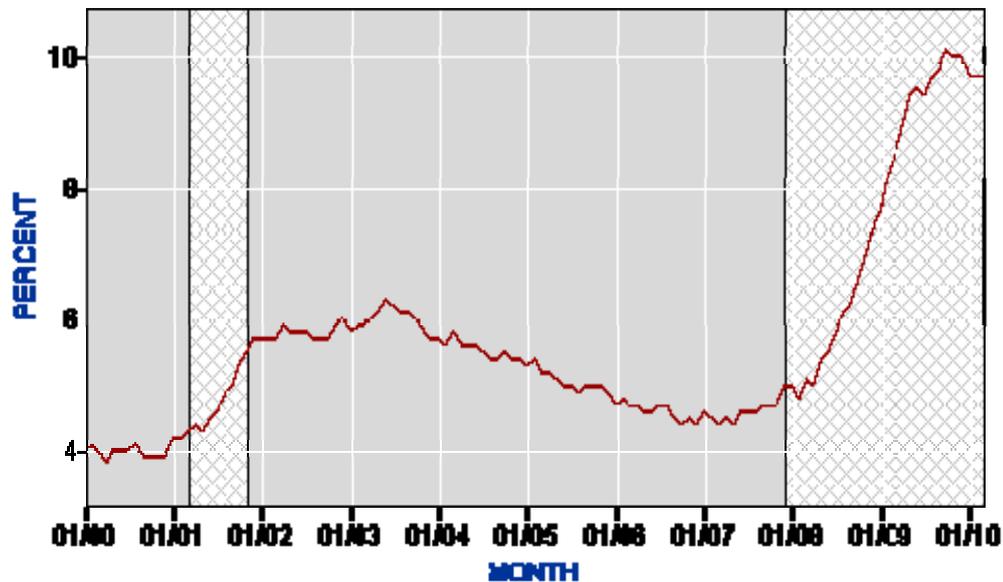
Sources: OECD, IMF, Historical Statistics of the United States (HSOUS), various country sources, and authors' calculations.

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.

Based on historical crisis precedent, unemployment rises for almost five years, with an average 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 in 1929, the employment consequences of financial crises are striking.

The relatively poor performance in advanced countries suggests the possibility that greater (downward) wage flexibility in emerging markets may help cushion employment during periods of severe economic distress. The gaps in the social safety net in emerging market economies, when compared to industrial ones, presumably also make workers more anxious to avoid becoming unemployed. It is also possible that unemployment volatility varies considerably in emerging or industrialized markets, and that emerging markets may adjust faster to market changes in general relative to the more established industrialized economies.

Unemployment rate (seasonally adjusted)



Note: Cross-hatched areas represents recessions.

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
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	5.3	5.4	5.2	5.2	5.1	5.0	5.0	4.9	5.0	5.0	5.0	4.9	
2006	4.7	4.8	4.7	4.7	4.6	4.6	4.7	4.7	4.5	4.4	4.5	4.4	
2007	4.6	4.5	4.4	4.5	4.4	4.6	4.6	4.6	4.7	4.7	4.7	5.0	
2008	5.0	4.8	5.1	5.0	5.4	5.5	5.8	6.1	6.2	6.6	6.9	7.4	
2009	7.7	8.2	8.6	8.9	9.4	9.5	9.4	9.7	9.8	10.1	10.0	10.0	
2010	9.7	9.7	9.7										

Unemployment in the United States was 9.7% at March 2010, with peak unemployment of 10.1% in October of 2009¹⁷. 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 2 and 1/2 years, with a slight improvement in the past 5 months. If the average historical crash saw a 7% increase in unemployment, then the current crash was a little less severe than historical precedent with a peak increase of 5.7% from its low. It now appears to be on its decline back to a long term stabilized rate. Since

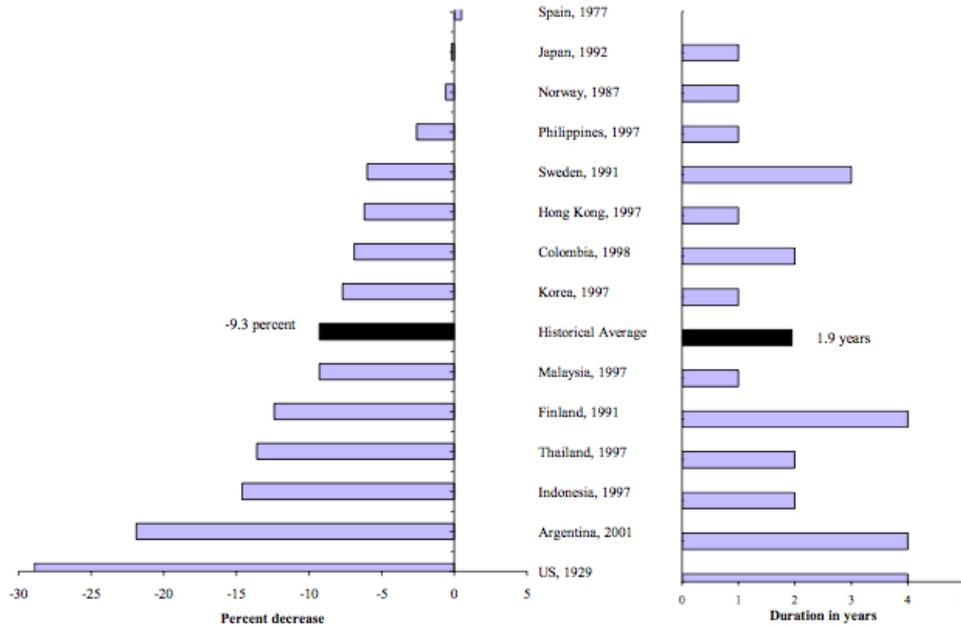
unemployment figures appeared to improve after 2 and ½ years, compared to the world financial crisis average of just under 5 years, the current crisis appears to be less severe than the historical average.

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. Post World War II period declines in real GDP were 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 and domestic credit. They also tend to have more fragile economies in general. When foreign capital comes to a sudden stop, economic activity heads into a tailspin. This lack of credit, both foreign and domestic, has a tendency to strangle otherwise profitable enterprises. It is possible that this stranglehold on credit is somewhat more pronounced in emerging economies than in industrialized ones, hence the deeper decrease in GDP. Functioning credit markets are essential to a healthy growing and efficient economy.

Compared to unemployment, the cycle from peak to trough in GDP is much shorter, only two years. Presumably, this is partly because potential GDP growth is positive, and we are measuring only absolute changes in income, not gaps relative to potential output. Even so, the recessions surrounding financial crises have to be considered unusually long compared to normal recessions that typically last less than a year. Multi-year recessions typically occur in economies that require deep restructuring.

Figure 4

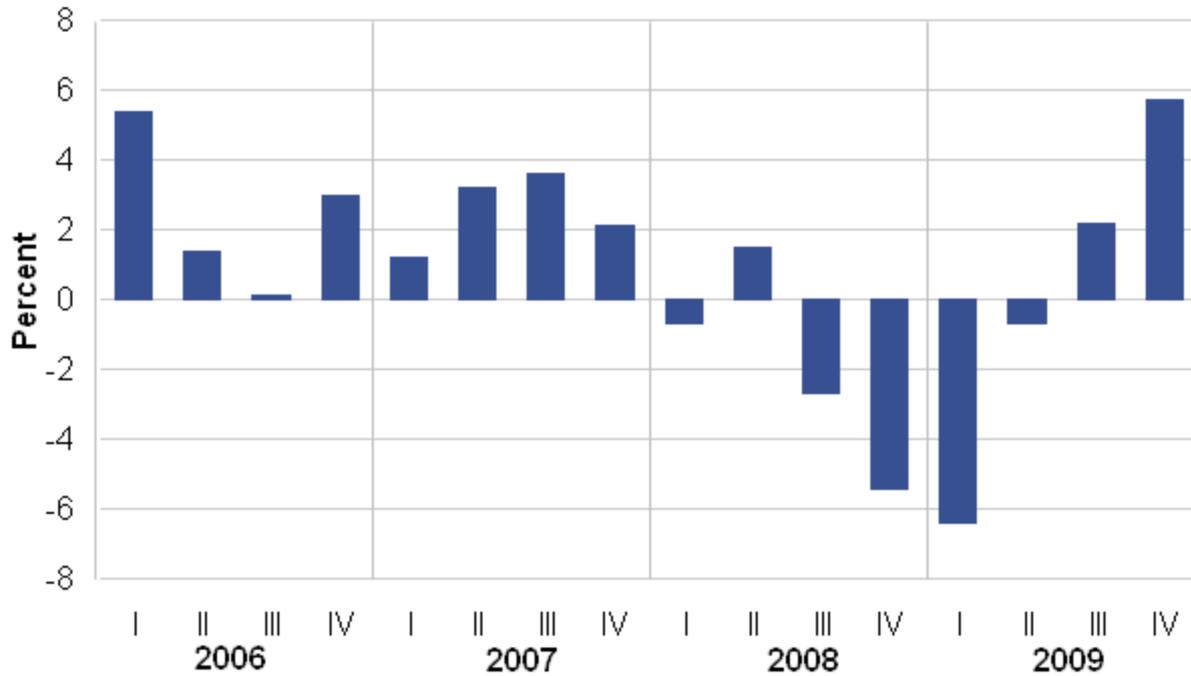
Past Real Per Capita GDP Cycles and Banking Crises: Peak-to-trough
 Percent Decline in Real GDP (left panel) and Years Duration of Downturn (right panel)



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

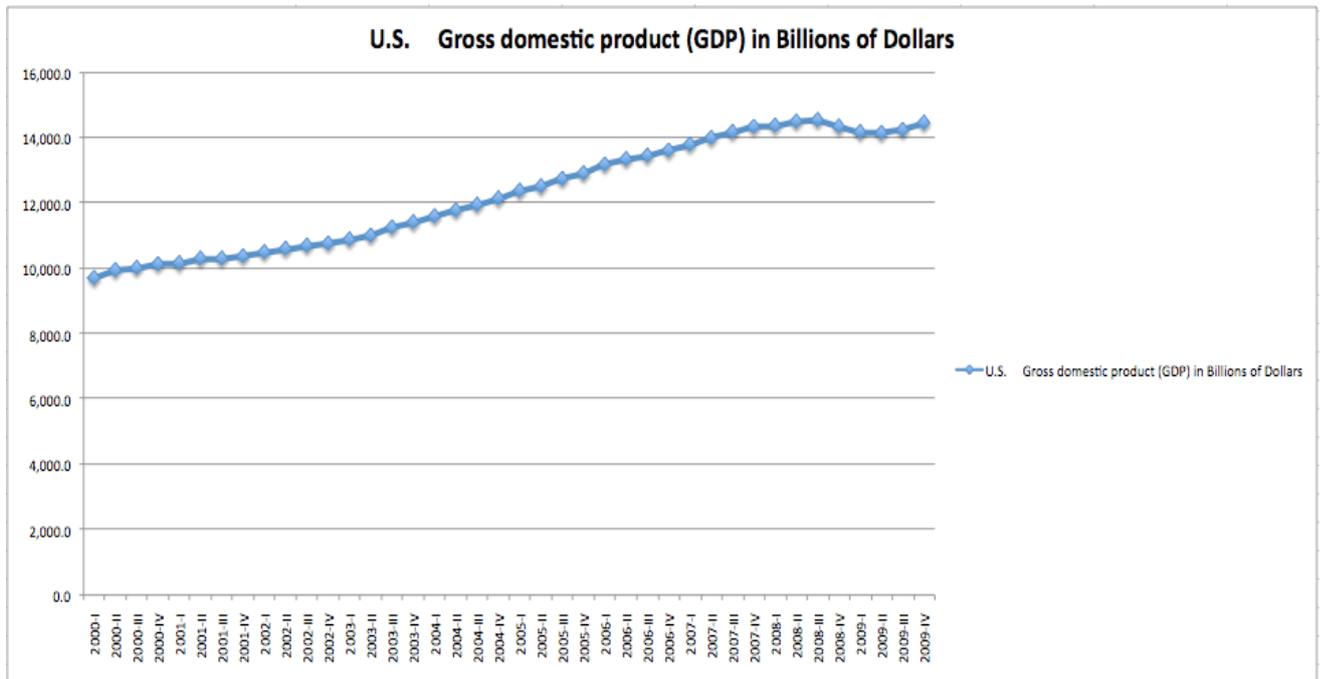
Notes: Each banking crisis episode is identified by country and the beginning year of the crisis. Only major (systemic) banking crises episodes are included, subject to data limitations. The historical average reported does not include ongoing crises episodes. Total GDP, in millions of 1990 US\$ (converted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

Quarter-to-Quarter Growth in Real GDP

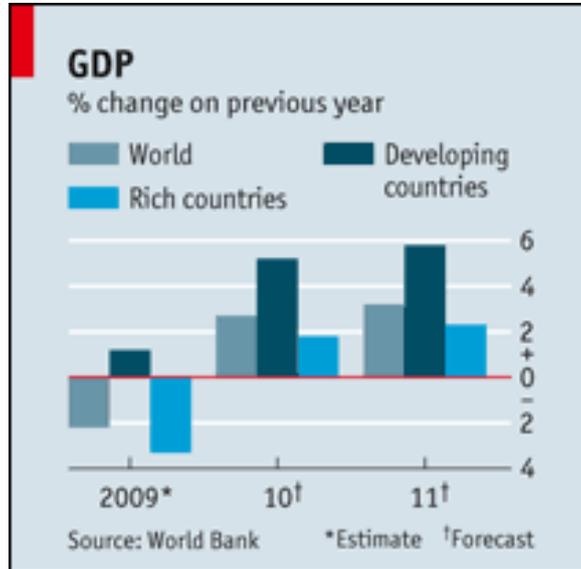


Real GDP growth is measured at seasonally adjusted annual rates.

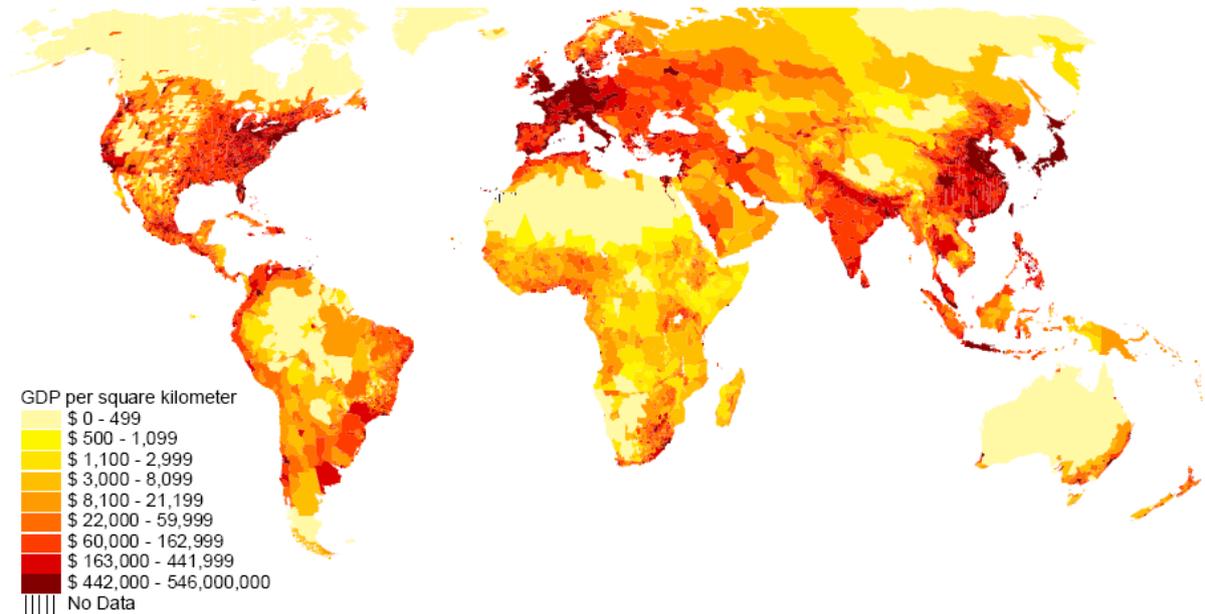
U.S. Bureau of Economic Analysis



GDP growth appears to have consistently grown since 2000 in current dollars. After adjusting for inflation, GDP slipped just slightly (down a tenth of one percent) in the 3rd quarter of 2008. GDP improved to positive figures after 1 year in the 3rd quarter of 2009, and was down approximately . This suggests that based on this factor, the general leading indicator of recovery, the the current crisis was less sever than the world historical average.



GDP Density



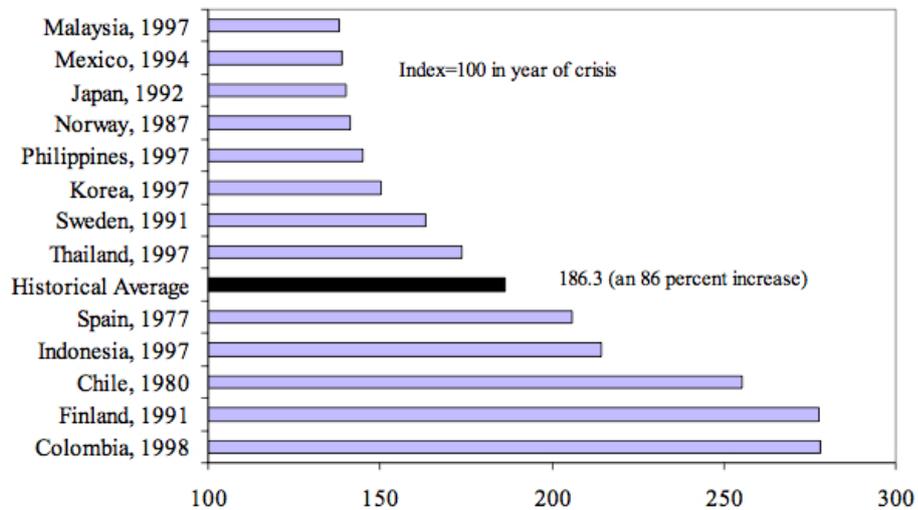
GDP 2008

Ranking, economy, millions of us dollars (World Bank)

1	United States	14,204,322
2	Japan	4,909,272
3	China	4,326,187
4	Germany	3,652,824
5	France	2,853,062
6	United Kingdom	2,645,593
7	Italy	2,293,008
8	Brazil	1,612,539
9	Russian Federation	1,607,816
10	Spain	1,604,174
11	Canada	1,400,091
12	India	1,217,490
13	Mexico	1,085,951
14	Australia	1,015,217

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.

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 percent. Reinhart and Rogoff (2008b), taking advantage of newly unearthed historical data on domestic debt, show that this same buildup in government debt has been a defining characteristic of the aftermath of banking crises for over a century. Percentage increases in debt were considered, rather than debt to-GDP, because sometimes steep output drops would complicate interpretation of debt-GDP ratios. As Reinhart and Rogoff (2008b) note, 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.

Current performance in the United States shows an increase in total debt outstanding of approximately 25% from 2007 to 3rd quarter 2009. This is well below the historical average for world financial crisis.

7. CONCLUSION

Slow growth from this crisis point can be expected as long as the more fragile economies, mainly in the rich countries, continue to be careful. This will continue for a decade or so until the effects of demographic shifts begin to have costly impacts for many countries, particularly in Europe, the developed world, and China. The developing world will be largely spared these problems due to a much lower average age. Even developed countries with less demographic problems will need severe adjustments to care for their growing elderly populations.

With the general fall of centrally planned economies around the world a massive amount of low cost labor has saturated the market, depressing the cost of goods as wages to these workers slowly increase. As these developing countries strengthen economically, wages and costs will increase, returning more inflationary pressure to the globe. These effects are already underway and will intensify over the coming decades.

Energy concerns are growing due to a narrow spread between demand for oil and current capacity. However, technology improvements in recent years, particularly in natural gas should ease energy concerns over the coming decades as the geopolitics of energy readjust to this abundant resource spread across the globe. Adjustments and retooling will be needed to take full advantage of these reserves. This and other energy related technological improvements should ease world economies already being squeezed from several other fronts. At a very minimum they will limit the exposure to price spikes as a more rapid shift to this energy source will be hastened if oil becomes too expensive or volatile.

The buyer / borrowing pool in real estate transactions is currently constrained to a fraction of its normal level due to limited availability of credit. Now with the world economic recovery underway in most countries, it appears that the real estate sector, commonly considered the

cause of, or at the very least a major factor contributing to the crisis, has recovered slower than most other major sectors of the economy. The real estate sector has not fully stabilized and is the only economic sector in the United States that still shows some worrying signs of continued slippage. Unemployment is worryingly high as well but it has held steady or decreased each month since its peak 5 months ago.

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. Recoveries are almost invariably accompanied by massive increases in government debt. This financial crisis followed the expected pattern of past crashes very well with one distinction. It appears that this crisis was generally mild compared with historical crisis averages. This is likely due to several factors, better technology and understanding of the market, consistent and coordinated moves by central bankers around the world, safe and generally adequate response to the challenges from most major governments, and little or no delay in getting government guarantees and stimulus programs in place. The world response turned what could have been a world depression into a manageable recession.

REFERENCES

Research on GDP and Demographic data provided by Danielle Nystrom of NewStream Companies

Research on general economic data provided by Kris Koran and Jackie Zambito of NewStream Companies

- (1) “Economics Focus, Systems Failure”, *The Economist*, November 28, 2009.
- (2) “The role of macroprudential policy”, Bank of England, November 2009.
- (3) The Warkwick Commission on International Financial Reform, November 2009.
- (4) General Neil Barofsky, TARP Special Inspector General’s Office, 4th Quarter 2009.
- (5) “America’s megabanks, Goodbye, or see you again”, *The Economist*, December 19, 2009.
- (6) “America’s bail-out bill, Cheap as chips”, *The Economist*, January 16, 2010.
- (7) “Economics focus, Digging out of Debt”, *The Economist*, January 16, 2010.
- (8) “America’s budget, Clueless in Washington”, *The Economist*, February 6, 2010.
- (9) “Withdrawing the drugs”, *The Economist*, February 13, 2010.
- (10) “Public-sector finances, The state’s take”, *The Economist*, November 21, 2009.
- (11) Greenspan, Alan. *The Age of Turbulence: Adventures in a New World*. New York: Penguin, 2007
- (12) “An unconventional glut”, *The Economist*, March 13, 2010.
- (13) “The Great Real Estate Revival”, Luke Mullins. *The Economist*, March 2010.
- (14) “Policy Brief”, *United Nations Economic Commission for Europe (UNECE)*, November 2009.
- (15) Carmen M. Reinhart, University of Maryland NBER & CEPR, and Kenneth S. Rogoff, Harvard University and NBER, *The Aftermath of the Financial Crisis* December 19, 2008. This paper was presented at the American Economic Association meetings in San Francisco

January 3, 2009 after a draft on December 19, 2008, and a summary published in the Economist January 10-16, 2009.

(16) (United States) National Association of Realtors statistical sales data 2008.

(17) (United States) Bureau of Labor and Statistics 2009.

(18) Alan Greenspan, Greenspan Associates, Banks Need More Capital, The Economist December 20 to January 2, 2009.

(19) The Economist Pocket World Figures 2008.

(20) Inside the Banks, The Economist January 24 to January 30, 2009.

(21) “Global house prices, Ratio Rentals”, *The Economist*. January 2, 2010.

BIOGRAPHICAL NOTES

Steven L. Nystrom, MA, MAI is the President of NewStream Companies, based in Tampa, Florida. NewStream Companies is a commercial real estate consulting firm that specializes in commercial real estate valuation. Prior to creating NewStream Companies, Steven was a senior associate at General Motors Acceptance Corporation (GMACCM), where he performed complex valuations on a wide variety of assets. He also performs analysis for mortgage-backed securities via the conduit portfolio market, as well as being a Special Magistrate in five counties for real estate tax assessment purposes. Steven has more than twenty years experience in all facets of real estate and commercial valuation. These assignments include general commercial facilities, special use properties, vacant land, litigation assignments, condemnation or eminent domain appraisals, environmentally sensitive wetlands, lease analysis and many large unique industrial, residential, tax assessment analysis, office and retail facilities.

Steven is an instructor for the Appraisal Institute, holds a Masters of Arts Degree from the University of Florida in Real Estate and Urban Analysis and a Bachelor of Arts degree in Economics from the University of Florida. Additionally, he is currently pursuing his Doctoral degree at the Aalto University School of Science and Technology in Real Estate Economics and Valuation.

CONTACTS

Steven L. Nystrom, MA, MAI
Principal – NewStream Companies
Commission 9
Working Representative to FIG
Appraisal Institute
5044 Cypress Trace Drive
Tampa, Florida 33624
Phone/Fax (813)-963-3510
Email Nystrom@newstreamcompanies.com