

# GENESIS OF CURRENT U.S. GREAT RECESSION AND ITS GLOBAL TRANSMISSION

Matiur Rahman, Professor of Finance, McNeese State University, Lake Charles, LA 70609

Muhammad Mustafa, Professor of Economics, South Carolina State University, Orangeburg, SC 29117

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## **ABSTRACT**

This paper is an exploration of the primary reasons for current U.S. great recession, its global transmission, major economic and financial programs, future challenges, and exit strategies. The root cause lies in the U.S. real estate market debacle due to massive subprime lending and proliferation of mortgage-backed securities. The real estate market trouble spilled over into U.S. major banks and other financial intermediaries as well as financial markets. Due to rapid financial globalization, the U.S. financial meltdown and deep recession caused damages to other major economies in the world. Worldwide major economic and financial programs saved the world economy from further deterioration, and set a stage for uncharted nascent recovery. There are dangers of high global inflation in the future with chance of double-dip recession if exit strategies are applied untimely to withdraw excess liquidity in inappropriate doses.

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Keywords: Great Recession, Mortgage Market Debacle, Mortgage-Backed Securities.

## **I. Introduction**

The U.S. economy is in the grip of a great recession, the severest in six decades since the Great Depression of the 1930s. The Collapse of the real estate market and the banking crisis nearly parallel those of the 1930s. More than 7.0 million U.S. workers lost jobs since the onset of this great recession in the second half of 2007, although the 10.1% unemployment rate in October, 2009 was well below the 20.9% unemployment rate in 1933 (Darby, 1976). In December 2009, it declined but still stubbornly remained high at 9.7%. This might get worse temporarily again when 2 million discouraged workers re-enter the job market. The joblessness could get far worse in the absence of some unprecedented and bold measures, taken by the current administration and the Federal Reserve System (the Fed). This nation has been through 10 recessions since the one in 1948, but the current one appears to be the worst in terms of duration and depth superseding the ones in 1973 and 1981 with 16-month duration each. The causes

of the great recession are also rooted in rapidly deteriorating bank and household balance sheets. This crisis is not bank liquidity – genic, but bank asset toxicity – genic. There was no liquidity shortage in the U.S. economy as revealed in negative growth in real federal fund rate and 6%-8% M2 growth for 2 years prior to the onset of great recession. In essence, the play of the hypotheses of “Too big to fail” and “Too connected to fail” led to the current deep U.S. economic crisis and then led to a global panic.

The troubles originated in the U.S. mortgage market that rapidly infected the mega U.S. banks and subsequently traveled to global financial markets consequent upon financial globalization and intimate inter-country economic connectivity. The causes of the current great recession are multiple and complex. Prima facie, the causes are analogous to those of the lost decade of Japan in late 1980s and into 1990s. To name a few of the causes for the current economic and financial meltdowns, the prominent ones are unusually

low interest rate environment since 2002, subprime mortgage lending leading to real estate market bubbles and bust, toxicity of mortgage-backed securities, complex credit default swaps, frozen credit market, opaque accounting innovations, regulatory oversight, regulatory constraint facing the Fed, unchecked greed for bank profit and disregard for risk management, etc.,. They are primarily responsible for the current global economic catastrophe. Many of these causes are the products of reckless deregulations of 1980s and 1990s, overly expansive monetary policy, proliferations of exotic and complex financial derivatives, regulatory failures, imperfections in information, and moral hazard (Gallegati, et al., 2008, Heuvel, 2008).

This paper intends to (i) trace the root causes of the current U.S. problem, (ii) explain its global transmission, (iii) narrate the global rescue efforts, and (iv) identify the unfolding future challenges and the Fed's pending exit strategy. Finally, conclusions are drawn. Accordingly, the paper is structured in consonance with the aforementioned.

## **II. Root Causes of the Current U.S. Problem**

Individuals easily qualified for residential mortgage loans even without downpayments and closing costs. Easy credit to make mortgages affordable stimulated demand for housing while the supply was restricted by smart growth policies. Together, they boosted housing prices to unsustainable levels (Sowell, 2009). There were one-year adjustable –rate mortgages (ARMs) with teaser rates for first 2-3 years of a mortgage. The initial rates were set artificially low and then reset much higher. The rating agencies eased requirements for a AAA mortgage-backed security (Gorton, 2007). Many mortgages were packaged into opaque securities and sold to public. Financial intermediaries held the

underlying mortgages for a brief period and bought some of them later for their own portfolios. Subprime loans increased from 9% of new mortgage originations in 2001 to 40% in 2006 (DiMartino and Duca, 2007).

The foreign saving glut from austerity after the 1997-98 Asian financial crises and its massive inflow as hot money into the U.S. financial system enabled the financial intermediaries meanwhile to borrow short-term money for making long-term loans. This practice exposed them to unduly high risk. The household debt doubled from \$7.0 trillion in 2001 to \$14 trillion in 2007. Many heavily indebted mortgage borrowers were unable to refinance their houses and could not keep up with monthly payment at reset higher interest rates. This resulted in massive foreclosures and huge losses for the financial intermediaries. For some time in 2009, daily foreclosures exceeded even 10,000.

As the housing boom ended in 2006, mortgage payments slowed and the value of mortgage-backed securities fell precipitously. These created a negative shock to the balance sheets of individuals and financial institutions. For individuals, mortgage balances exceeded the values of their homes. As a result, mortgages fell into arrears and homeowners walked away from their speculatively purchased homes. The busting of housing bubbles destroyed household savings in the ensuing financial meltdown forcing individuals to slash their spending. The economy thus slid into deep recession at the end of 2008 following declining consumer spending that constitutes nearly 70% of U.S. GDP (O'Driscoll Jr., 2009). The balance sheet shocks led to banks' capital impairment and diminished capacity for new lending. The disappearance of cushion against future losses virtually froze the credit market.

A gyration of all the above negative factors triggered a full-blown U.S. financial

meltdown. A string of failures and near-collapses of major financial institutions posed systemic risk concerns for the Fed. The failure of Bear Stearns and near-collapses of IndyMac Federal Bank, Fannie Mae, Freddie Mac, Lehman Brothers, AIG and Citigroup kept financial markets on the edge throughout much of 2008 and into 2009 (Bullard et al., 2009). The Lehman failure, the forced mergers of Bear Stearns and Merrill Lynch, the failures and mergers of Wachovia and Washington Mutual, the AIG debacle, and the Madoff scandal are only the tip of the iceberg of regulatory failure.

In 2006, over 14 million new mortgage loans were originated and the total amount of home mortgages exceeded \$10 trillion, having doubled in a little over 5 years. The issuance of structured securities backed by mortgages rose steeply from \$20 billion in 2004 to \$180 billion in late 2006. The notional amount of outstanding credit default swaps (a kind of insurance contract on mortgage-backed securities and bonds) reached \$69 trillion (Bardhan, 2009). The proliferation of these connecting threads from housing sales to high and speculative finance has been at the center of the present crisis. This has also compounded the fungibility of money and financial flows.

The channeling of savings from emerging economies to the U.S. led to excessive liquidity and low interest rates (Jones, 2009). The U.S. – centric financial flows and concomitant overly low interest rates for a considerable length of time provided subsidy to investor class enabling Wall Street to operate at low cost to the benefit of private equity funds that borrowed heavily to fund acquisitions and hedge fund operators who also took on enormous leverage. The cheap money thus led to mispricing of risk that fostered a frantic search for higher returns, higher risk-taking, high leverage, and dubious practices on the selling side.

The regulatory agencies (the Fed, the Office of the Comptroller of Currency, the FDIC, the SEC, and state banking agencies) failed to do their jobs even under a limited regulatory regime (O’Grady, 2009). To protect the safety and soundness of the banking system is the primary mission of bank regulatory agencies. The mission of the SEC is to protect investors, maintain fair, orderly, and efficient markets, and facilitate capital formation. They all failed in these stated missions.

There are reports of massive frauds in the housing and mortgage markets due to regulatory lapses and oversight. The lack of the Fed’s legal authority for potentially helpful financial stabilization measures and a Congress reluctant to grant such authority are also responsible for the financial crisis as the Fed could not act quickly in the midst of a market panic (Swagel, 2009).

### **III. Global Transmission**

The U.S. housing sector crisis turned into a full-blown global financial crisis with far-reaching consequences. Equity markets across emerging economies of Asia declined sharply and immediately, followed promptly by property markets. The V-shaped recovery of Asia from 1997-98 economic crisis induced austerity. As a result, a saving glut was created. This created excessive short-term capital inflows to USA for several years and later excessive short-term capital outflows from USA. Since the mid-2008, exchange rates have been depreciating across the board and foreign exchange reserves were being drawn down rapidly to fight the free fall of currencies (Sirimanne, 2009). This triggered cancellation of export orders, export financing cut back, and layoffs after layoffs around the globe. However, some regions were affected more than others. The worst hit region is the Western Europe and next to it are Republic of

Korea, Taiwan, and Japan in Asia followed by Brazil and Russia. In contrast, India and China managed to tackle the financial crisis with impressive performance. A comparative picture of the US, Canada, selected European economies BRIC is provided in Appendices and Figures. They reveal case-by-case similar patterns as evident in the case of the USA with some exceptions in Canada, India and China. The differences are only in the magnitudes of severity.

The largest U.S. economy in the world is the epicenter of the crisis. The rest of the world is connected to it through financial market integration, international banking, and U.S. dollar still being the major international reserve currency. Still 55% of foreign exchange reserves are maintained in U.S. dollar by central banks around the world. In particular, export-intensive developing countries experienced significant drops in exports to USA. The U.S. market is the largest in the world as 300 million people out of 6,500 million world population consume about 20% of world manufacturing goods. In September 2008, interbank markets in the U.S. and the Western Europe got near-frozen. Financial institutions and even corporations came to rely mainly on central bank funding.

In brief, deeper international capital market integration, rise of complex securitization, growth of private pools of capital, excessive borrowings by banks, proliferation of financial derivatives and credit bubble fueled U.S. financial crisis that transformed into a global financial crisis. A shock in the leading economy of such magnitude is likely to lead to disinvestments in other correlated countries resulting in a contagion, if investors are characterized by decreasing absolute risk aversion since the shock reduces investors' wealth and thus make them more risk averse (Goldstein and Pauzner, 2004; Kyle and Xiong, 2001). The global

dimension of this crisis led to global recession – the worst affected are the USA and the Eurozone, in particular.

#### **IV. Global Rescue Efforts**

In particular, the US and European central banks and governments engaged in unprecedented activism in response to the dramatic developments in financial markets. They tried to tackle insolvency in important parts of the financial system. The USA announced that it could not let its 19 largest financial firms fail on the ground of undercapitalization.

“To protect them and to stimulate the economy, the Troubled Asset Relief Program, commonly referred to as TARP was introduced. This is a program of the United States government to purchase assets and equity from financial institutions to strengthen its financial sector. It is the largest component of the government's measures in 2008 to address the subprime mortgage crisis. This allowed the United States Department of the Treasury to purchase or issue up to \$700 billion of “troubled asset”, defined as “(A) residential or commercial mortgages and any securities, obligations, or other instruments that are based on or related to such mortgages, that in each case was originated or issued on or before March 14, 2008, the purchase of which promotes financial market stability; and (B) any other financial instrument that the Secretary, after consultation with the Chairman of the Board of Governors of the Federal Reserve System, determines the purchase of which is necessary to promote financial market stability, but only upon transmittal of such determination, in writing, to the appropriate committee of Congress.”

In short, this allowed the Treasury to purchase illiquid, difficult-to-value assets from banks and other financial institutions. The targeted assets can be collateralized debt

obligations, which were sold in a booming market until 2007 when they were hit by widespread foreclosures on the underlying loans. TARP is intended to improve the liquidity of these assets by purchasing them using secondary market mechanism, thus allowing participating institutions to stabilize their balance sheets and avoid further losses.

TARP does not allow banks to recoup losses already incurred on troubled assets, but officials expect that once trading of these assets resumes, their prices will stabilize and ultimately increase in value, resulting in gains to both participating banks and the Treasury itself. The concept of future gains from troubled assets comes from the hypothesis in the financial industry that these assets are oversold, as only a small percentage of all mortgages are in default, while the relative fall in prices represents losses from a much higher default rate.

The Act requires financial institutions selling assets to TARP to issue equity warrants (a type of security that entitles its holder to purchase shares in the companies) to the Treasury. In the case of warrants, the Treasury will only receive warrants for non – voting shares, or will agree not to vote the stock. This measure is designed to protect taxpayers by giving the Treasury the possibility of profiting through its new ownership stakes in these institutions. Ideally, if the financial institutions benefit from government assistance and recover their former strength, the government will also be able to profit from their recovery.

Another important goal of TARP is to encourage banks to resume lending again at levels seen before the crisis, both to each other and to consumers and businesses. If TARP can stabilize bank capital ratios, it should theoretically allow them to increase lending instead of hoarding cash to cushion against future unforeseen losses from troubled assets. Increased lending equates to “loosening” of

credit, which the government hopes will restore order to the financial markets and improve investor confidence in financial institutions and the markets. As banks gain increased lending confidence, the interbank lending interest rates (the rates at which the banks lend to each other on a short term basis) should decrease, further facilitating lending.

The TARP operates as a “revolving purchase facility.” The Treasury will have a set spending limit, \$250 billion at the start of the program, with which it will purchase the assets and then either sell them or hold the assets and collect the ‘coupons’. The money received from sales and coupons will go back into the pool, facilitating the purchase of more assets. The initial \$250 billion can be increased to \$350 billion that may be released to the Treasury upon a written report to Congress from the Treasury with details of its plan for the money. Congress then has 15 days to vote to disapprove the increase before the money will be automatically released.

The first \$350 billion was released on October 3, 2008, and Congress voted to approve the release of the second \$350 billion on January 15, 2009. One way that TARP money is being spent is to support the “Making Homes Affordable” plan, which was implemented on March 4, 2009, using TARP money by the Department of Treasury. Because “at risk” mortgages are defined as “troubled assets” under TARP, the Treasury has the power to implement the plan. Generally, it provides refinancing for mortgages held by Fannie Mae and Freddie Mac. Privately held mortgages will be eligible for other incentives, including a favorable loan modification for five years.” (U.S. Department of Treasury, 2009).

One of the most difficult issues facing the Treasury in managing TARP is the pricing of the troubled assets. The Treasury must find a way to price extremely complex and

sometimes unwieldy instruments for which a market does not exist. In addition, the pricing must strike a balance between efficiently using public funds provided by the taxpayer and providing adequate assistance to the financial institutions that need it.

Another major program is the Term Asset-Backed Securities Loan Facility (TALF). The Federal Reserve created it on November 25, 2008 in order to help market participants meet the credit needs of households and small businesses by supporting the issuance of asset-backed securities (ABS) collateralized by auto loans, student loans, equipment loans, floorplan loans, insurance premium finance loans, loans guaranteed by the Small Business Administration (SBA), residential mortgage servicing advances or commercial mortgage loans. Under the TALF, the Federal Reserve Bank of New York (FRBNY) is authorized to lend up to \$1 trillion (originally \$200 billion) on a non-recourse basis to holders of certain AAA-rated ABS backed by newly and recently originated consumer and small business loans. As TALF money does not originate from the US Treasury, the program does not require congressional approval to disburse funds.

The reasons behind the TALF, given by the Federal Reserve System, are as follows:

“New issuance of ABS declined precipitously in September and came to a halt in October, 2008. At the same time, interest rate spreads on AAA-rated tranches of ABS soared to levels well outside the range of historical experience, reflecting unusually high risk premiums. The ABS markets historically have funded a substantial share of consumer credit and SBA-guaranteed small business loans. Continued disruption of these markets could significantly limit the availability of credit to households and small businesses that create 60% - 70% of U.S. jobs and thereby contribute to further weakening of U.S.

economic activity. The TALF is designed to increase credit availability and support economic activity by facilitating renewed issuance of consumer and small business ABS at more normal interest rate spreads.” (Federal Reserve System, 2008).

These efforts more than doubled the balance sheet of the Fed swelling over \$2.2 trillion in one year. Thus, there has been excess money in the economy. They have at least stopped the economy from shrinking further. As a result, there are some signs of renewed stability amid fluctuations in financial markets, real estate markets and the top-tier banking sector. But many small banks now appear to be at risk of failing surpassing the record of 140 bank failures in 2009. A fragile statistical recovery is now in the offing while a human recession still persists as the job market is yet to reveal some solid improvement since the unemployment rate is still high near double-digit and the monthly fluctuating data on new jobless claims show some unsustainable downward trend. The optimism for a V-shaped recovery might be replaced with pessimism for rare double-dip recession of 1937. The other major economies of Western Europe belatedly followed the US lead in this respect with less vigor. This is the reason why U.S. economic growth outpaces that of Western Europe earlier, although the current recovery is led by Asia. The sovereign debt crisis of Greece beginning in February, 2010 and unfolding economic troubles in Spain further complicate and dim prospects of recovery in the Euro-zone in the midst of uncertainties around the proposed rescue (€45 billion) plan for Greece in collaboration with the IMF. Once settled, things might improve in the Euro zone. There is now abundant excess money in the world economy. This raises fear of double-digit global inflation in the foreseeable future. However, inflation remains subdued for now. This gives the major central

banks some breathing time to maintain low interest rates focusing on growth and jobs. To add further, higher future inflation may not be so bad because it will reduce real value of national debt and lighten burden on taxpayers. China and India are on sturdy recovery path. Both countries are confronting resurgence of high inflation and are poised to tighten monetary policy. China has already started reducing bank credit, and restricting inflow of foreign hot money. The Reserve Bank of India already increased repurchase (overnight) rate twice in recent months.

## **V. Unfolding Future Challenges and Pending Exit Strategy**

Very low interest rates and unprecedented deluge of liquidity may again engender another bubble. The Fed, ECB, the Bank of England, the Bank of Japan and Swiss National Bank together injected \$2.74 trillion in outstanding amount of liquidity in 2008. By now, this amount has gone up even much higher. Such enormity of excess liquidity is highly likely to lead to resurgence of worldwide high inflation. This calls for timely tightening of both monetary and fiscal policies. The stimulative Keynesian policy of deficit financing should come to an end which does not guarantee a recovery from recession as people may reduce spending in apprehension of further tax increases, as outlined in the theory of Ricardian equivalence. Imperfect timing to soak up excess liquidity as a part of exit strategy may repeat the US mistake of 1937 and that of Japan in 1997. Restoration of US fiscal discipline is an imperative as the national debt has reached 90% of GDP. This is even higher at 110% when the debt of Fannie Mae and Freddie Mac are included. National debt in excess of 90% of GDP may deter long-run sustainable growth of the U.S. economy, as evidenced in Japan, France, Germany, and Italy. The U.S. \$862 billion stimulus package

has so far produced mixed results, but hardly final. The \$1.25 trillion program to purchase mortgage securities under TALF should also end at an appropriate time.

The U.S. government should reduce spending or even raise taxes with political pains to shrink multi trillion dollar budget deficit. However, the outcome will depend on interactions between spending and tax multipliers. The Fed should increase the spread between discount rate and federal funds rate at the pre-crisis level of 1% from its current level of 0.15%. It should also pay higher rate on banks' excess reserves at district Feds to prevent them from fueling inflation. The Fed has already raised discount rate by 0.25% to 0.75% in February, 2010 but left federal fund rate unchanged at 0.25%. This will encourage banks to rely more on private funding markets for short-term credit.

The housing sector started showing price stability since January, 2010. But waves of foreclosures bring more houses in the market. As a result, excess supply, thus created, may bring the prices further down in the future. To add further, top-tier banks are recovering at a faster clip, but the rest of the industry continues to slide. This is the result of incurring losses on commercial real estate loans. The overall bank lending thus falls at an unprecedented rate since 1942 thereby a new credit crunch is information.

To break the strong connect between "liquidity risk" and "opaque off balance sheet exposures", appropriate regulatory and supervisory responses are needed. Pro-active new financial regulations are necessary. Even the restoration of the Glass-Steagall Act of 1933 may be necessary for separating commercial banking from investment banking to promote specialization and efficiency. Giant financial conglomerates should be deconsolidated according to specialized products and services to minimize the moral

hazards of being “Too big to fail” and “Too connected to fail” following the proposed Volcker Rule.

## **VI. Conclusions**

In brief, turmoil in housing, credit and financial markets plunged the U.S. economy into this great recession. The root cause of current U.S. great economic crisis lies in U.S. real estate market debacle consequent upon massive subprime loans through 1990s till 2006. Liquidity shortage was not its causes unlike the Great Depression of early 1930s. Rather excess liquidity led to real estate market and financial bubbles. The mega U.S. financial intermediaries held mortgage-backed securities in their balance sheets. As the bubbles busted, they became illiquid and toxic. The real estate market collapse and plunging stock market hit household and bank balance sheets. The negative wealth effect reduced consumer spending and illiquid assets in bank balance sheets froze the credit market hurting small businesses as well as households. Thus, financial meltdown and deep recession became inevitable. The moral hazard of mega banks also added to the crisis that transmitted quickly through the rest of the world.

To tackle the problem of such gigantic dimension, the U.S. government and the Fed embarked upon TARP and TALF, respectively. Both prevented massive bank failures and job losses by saving the economy from sliding into another Great Depression. Other major developed and emerging economies followed the U.S. lead. The world is now deluged with excess liquidity that may lead to global inflation in the future and another bout of asset bubbles.

To pre-empt these unfolding challenges, there is a growing need to withdraw excess liquidity through a timely exit strategy. Imperfect timing may also enhance the chance of double-dip recession. Financial re-regulations and

closer regulatory supervision also deem necessary. The problem of moral hazard emanating from “Too big to fail” and “Too connected to fail” should also be minimized.

In closing, the National Activity Index (a composite of 85 economic indicators) of the Federal Reserve Bank of Chicago showed economic expansion, but not fast enough to undo the damage, done by the great recession (Wall Street Journal, 2010). The index rose to 0.2 in January, 2010 from a negative 0.58 in December, 2009. The expansion is close to its historical average. However, the nascent recovery is likely to be a jobless one and yet to solidify. A proper assessment will take years to come.

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### Appendix I - Real Estate Price (% change)

Country	2007	2009	% Change
USA	190	138	-27.368
Canada	150	158	5.33
<b>EUROPE/EURO ZONE</b>			
UK	350	326.4	-6.743
Germany	9921	9657	-2.66
France	2600	2300	-11.54
Italy	150	190	26.667
Greece	325	320	-1.5385
Portugal(price/sq.m)	1250 euro	1150 euro	-8
Spain (price/sq.m)	22000 euro	18000 euro	-18.182
Ireland(avg price)	310,000 euro	270,000 euro	-12.903
<b>BRIC</b>			
Brazil	N/A	N/A	N/A
Russia	325	410	26.1538
India	N/A	N/A	N/A
China	1650	2250	36.36

Sources: <http://www.globalpropertyguide.com/real-estate-house-prices>

### Appendix II - Stock Market Price (% change: 2007-2009)

Country	Jan, 2007	Dec, 2009	% Change
USA (DJIA)	12,621.69	10,548.51	-16.43
Canada(S&P-TSX composite)	13034.12	11717.46	-10.10
<b>EUROPE/EURO ZONE</b>			
UK (FTSE100)	6,203.10	5,397.90	-12.98
Germany (DAX index)	6,789.11	5,776.61	-14.91
France (cac40)	5,608.31	3,935.50	-29.83
Italy(FTSE MIB)	42,197.00	23,248.39	-44.91
Greece(ASE)	4,619.00	2,233.00	-51.66
Portugal(PSI20)	11,565.10	8,479.32	-26.68
Spain (IBEX 35)	14,553.20	11,940.00	-17.96
Ireland(ISEQ)	9,205.16	2,974.93	-67.68
<b>BRIC</b>			
Brazil(Bovespa)	44,642.00	68,588.00	53.64
Russia(IndexCF)	1,626.00	1,342.00	-17.47
India(S&P SNX Nifty)	4,082.70	5,201.05	27.39
China(SSE composite)	2,786.33	3,277.14	17.61

Sources: <http://uk.finance.yahoo.com>; <http://finance.yahoo.com>

### Appendix-III - Bank stock price (change(%)) :2007- 2009)

Country	Jan 2007	Dec 2009	% Change
USA (AIG, \$)	1326.69	30.6	-97.69
Canada(Royal Bank of Canada)	40.9	53.06	29.73
<b>EUROPE/EURO ZONE</b>			
<b>UK (Lloyds bank, p)</b>	581.5	49.84	-91.43
Germany (Deutsche bank,p)	103.6	49.42	-52.30
France (BNB Paribas bank)	77.00	55.78	-27.56
Italy(UBI Banca)	18.91	10.04	-46.91
Greece(Alpha bank, Euro)	20.88	7.50	-64.08
Portugal(Itausa Portugal bank)	10.92	11.84	8.42
Spain (Banco Sabadell)	7.69	3.88	-49.54
Ireland (Allied Irish Bank)	19.93	1.20	-93.98
<b>BRIC</b>			
Brazil (Banco Bradesco, \$)	13.07	21.52	64.65
Russia (Sberbank)	82.60	80.30	-2.78
India (SBI bank, Rs.)	972.38	2,270.05	133.45
China(Bank of china,\$)	3.34	4.20	25.75

Sources: <http://stockcharts.com>; <http://finance.yahoo.com>

### Appendix IV - Unemployment rate (% change: 2007- 2009)

Country	Jan 2007	Dec 2009	% Change
USA	4.60	10.00	5.40
Canada	6.20	8.40	2.20
<b>EUROPE/EURO ZONE</b>			
UK	5.50	7.80	2.30
Germany	9.60	8.10	-1.50
France	8.80	10.00	1.20
Italy	6.20	8.50	2.30
Greece	8.6	9.7	1.10
Portugal	8.4	10.1	1.70
Spain	8.2	19.5	11.30
Ireland	4.4	12.5	8.10
<b>BRIC</b>			
Brazil	9.3	6.8	-2.50
Russia	7.1	8.20	1.10
India	7.8	6.8	-1.00
China	4.1	4.3	0.20

Source:<http://www.tradingeconomics.com>

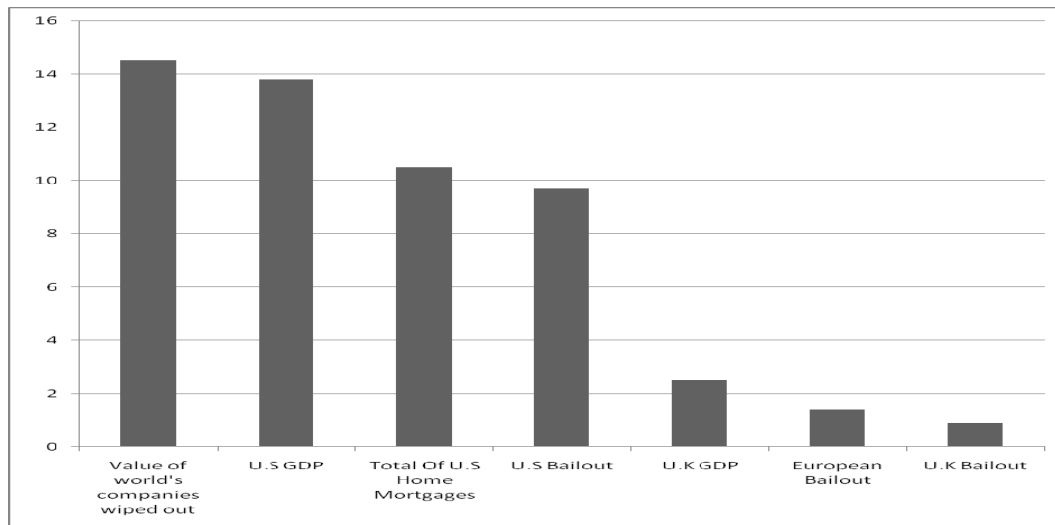
## Appendix V - (Exchange rates)

### Exchange Rate (% change:2007-2009)

Country	Jan 2007	Dec 2009	% Change
USA (US dollar index)	84.78	76.73	-9.50
Canada(US dollar/Can. Dollar)	0.850691	0.949132	11.57
UK (Dollar/Pound)	1.95867	1.62417	-17.08
Euro zone (Dollar/Euro)	1.2999	1.46136	12.42
<b>BRIC</b>			
Brazil(dollar/Real)	0.467828	0.571598	22.18
Russia(dollar/Ruble)	0.038973	0.0332887	-14.59
India(Dollar/Rupee)	0.0226186	0.021460	-5.12
China(dollar/Yuan)	0.12839	0.146462	14.08

Source: <http://www.x-rates.com>

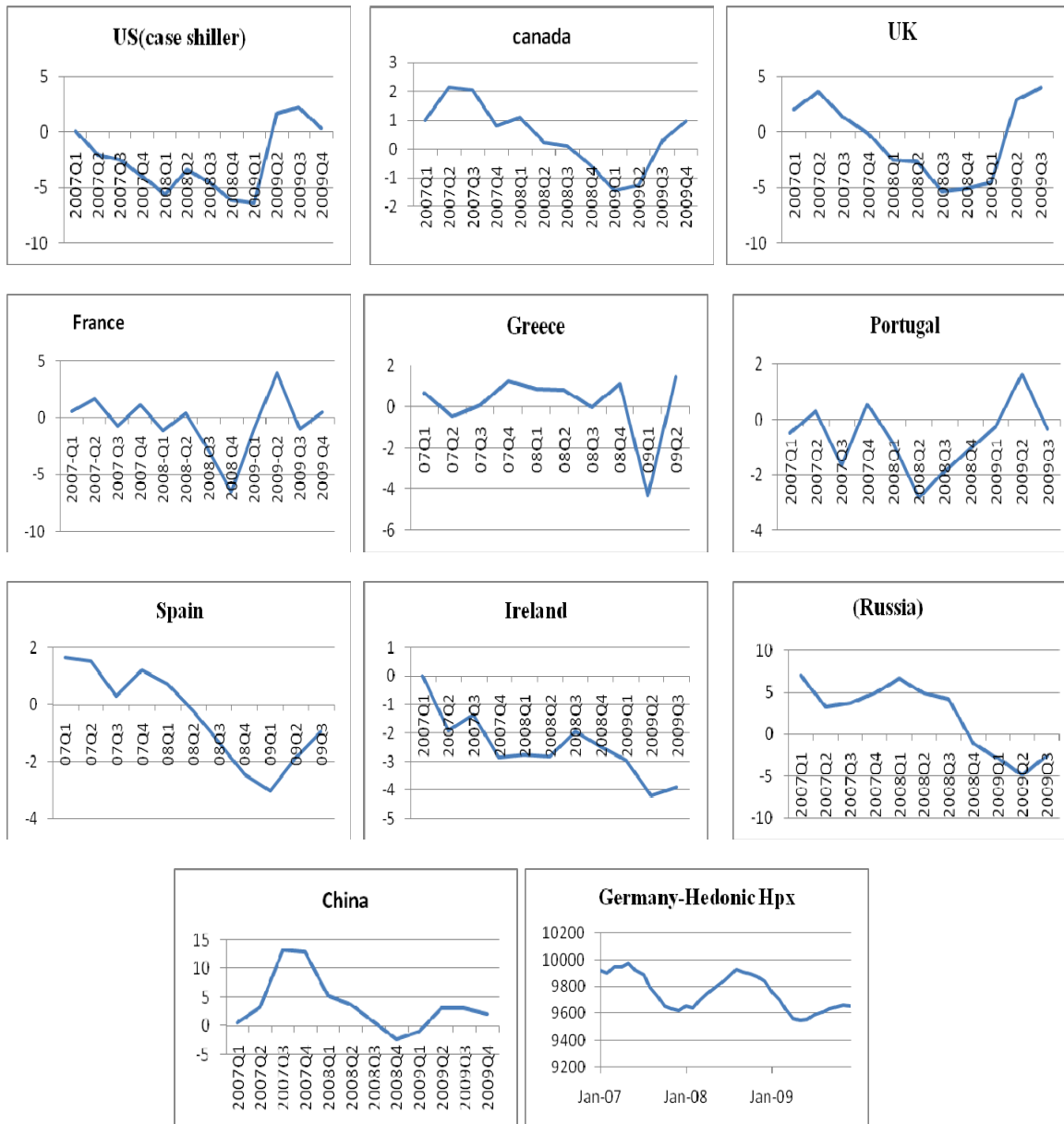
## Appendix VI - Global Financial Crisis: Losses and Bailouts for US and European Countries in Context (\$ trillion)



\*Adjusted for inflation

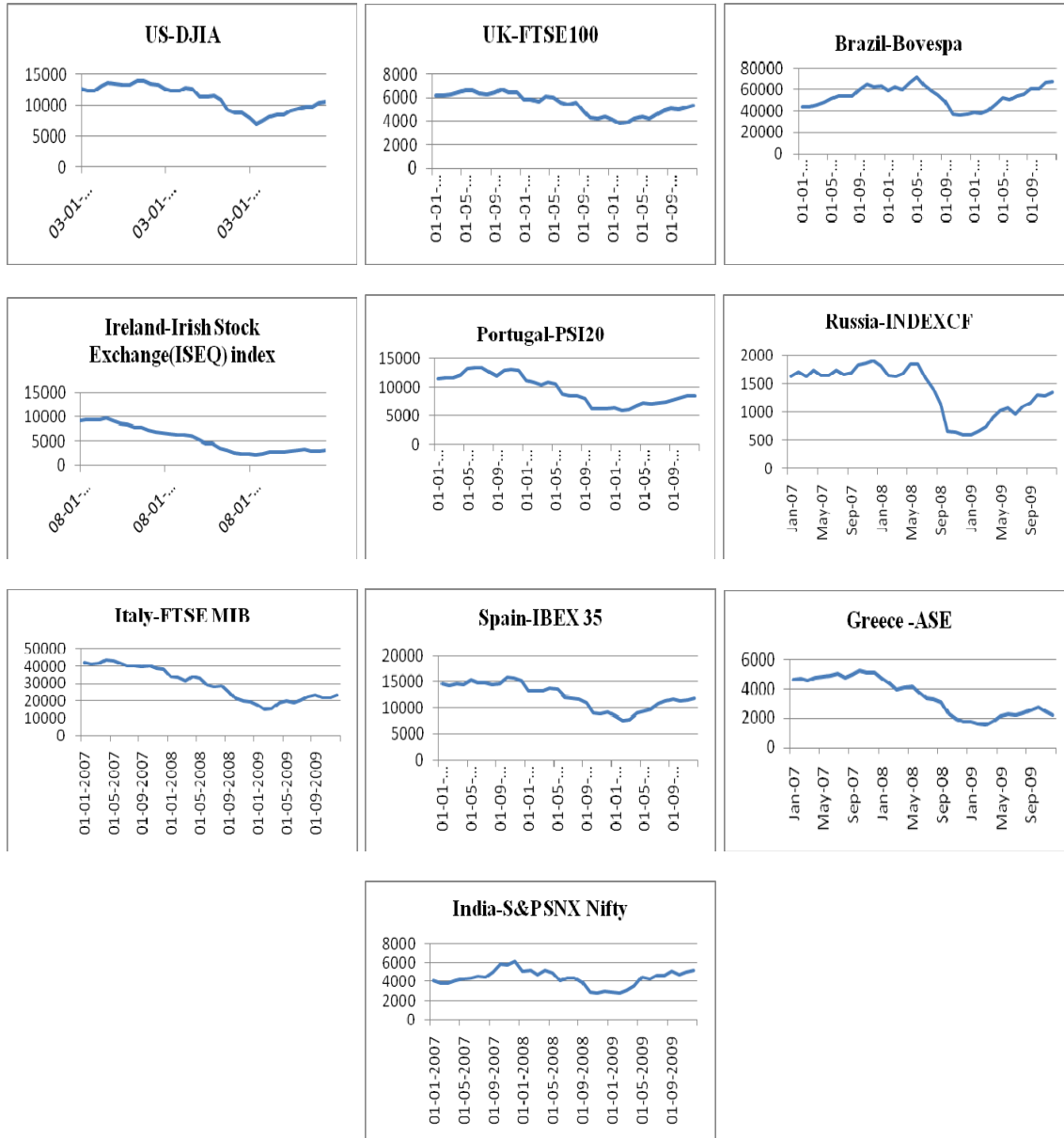
Sources: BBC, Bloomberg, UPI, globalissues.org, Feb 2009

**Figure I Real Estate Market Price Movements**



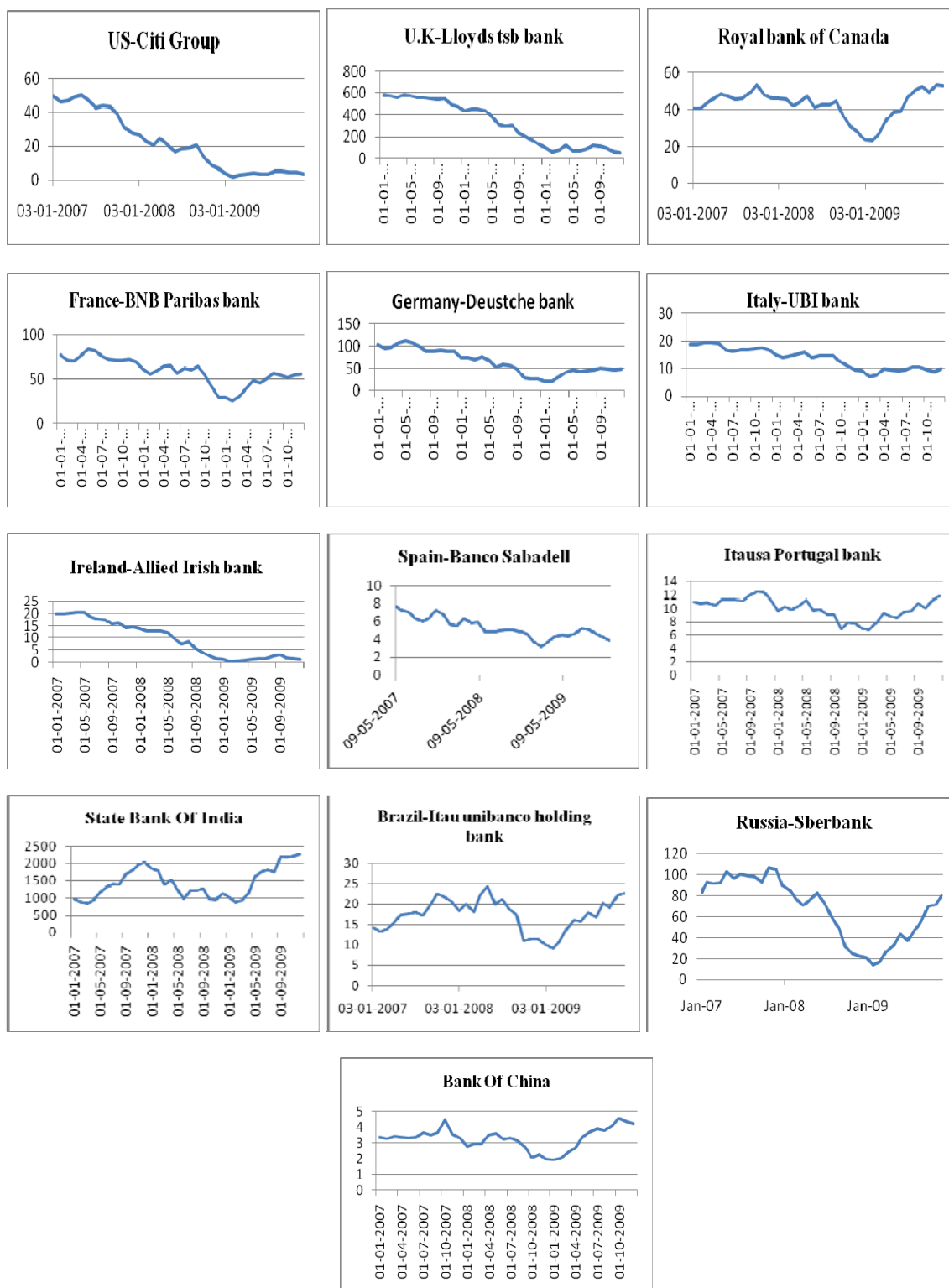
Source: <http://www.globalpropertyguide.com/real-estate-house-prices>

**Figure II Stock Market Price Movements**



Sources: <http://uk.finance.yahoo.com> <http://finance.yahoo.com>

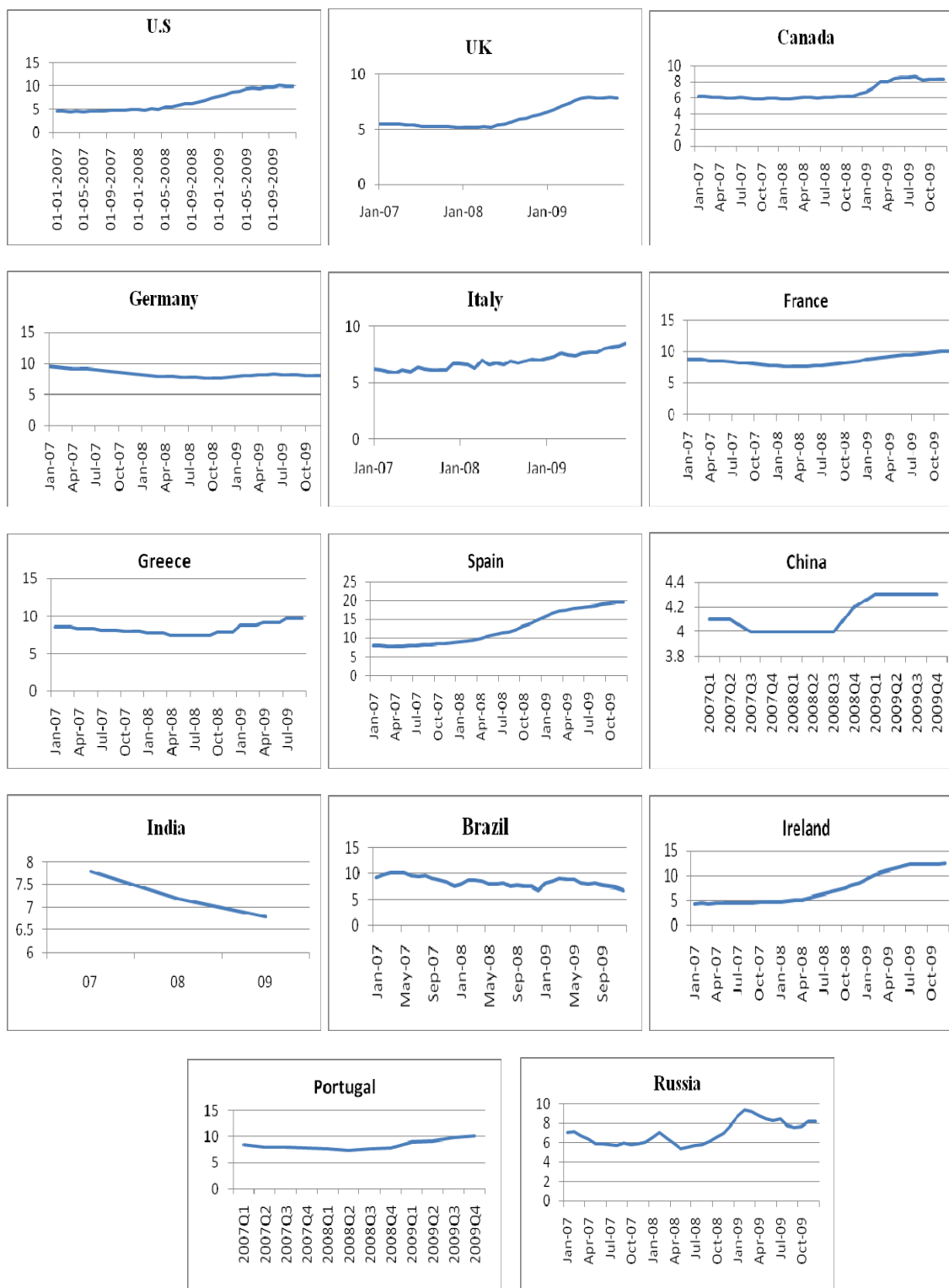
**Figure III Major Bank Stock Price Movements**



Sources: <http://uk.finance.yahoo.com>

<http://finance.yahoo.com>

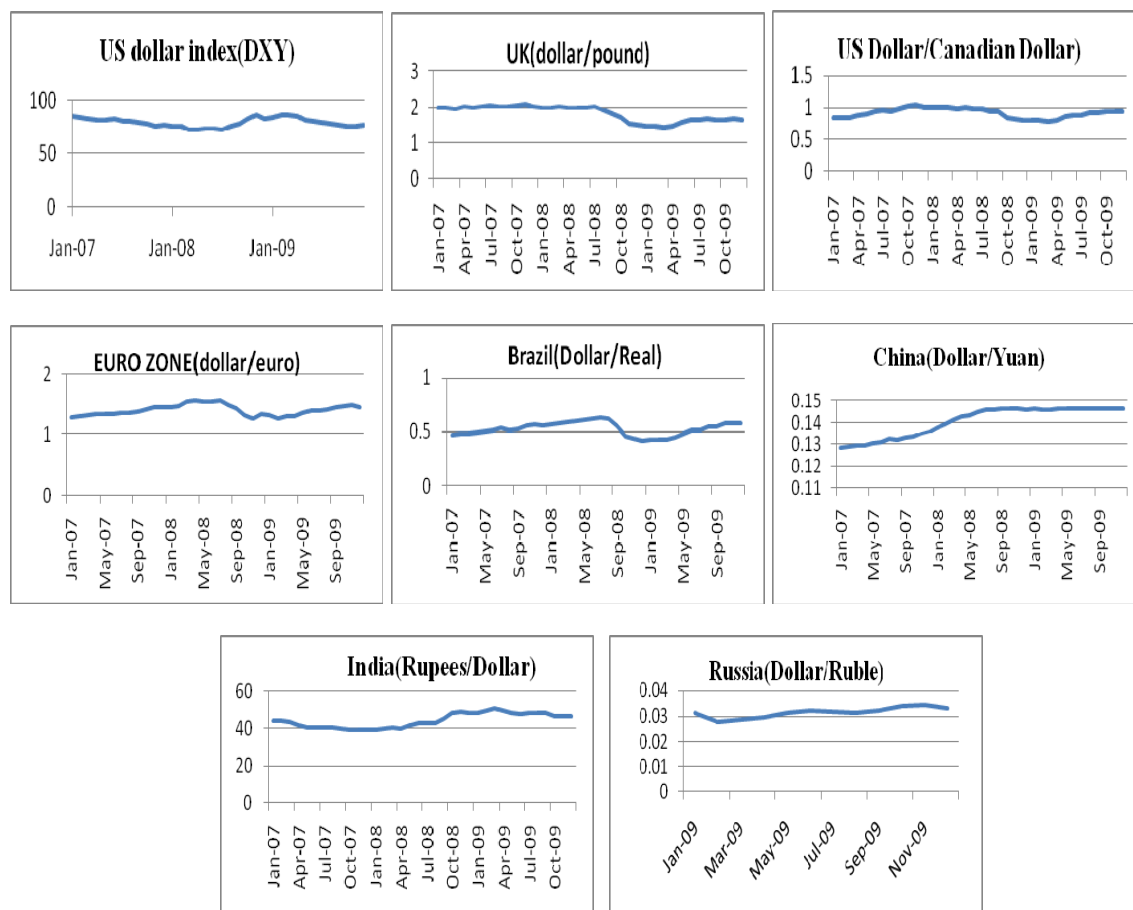
**Figure IV Job Situation (unemployment rate movements)**



Source: <http://www.tradingeconomics.com>



**Figure V Exchange Rate Movements**



Source: <http://www.x-rates.com>