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# Sub-Prime Financial Crisis and US Policy Choices

INTERNATIONAL  
ECONOMIC POLICY

**Yonghyup Oh and Wonho Song**

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Korea Institute for International Economic Policy

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## **Executive Summary**

This paper argues that the subprime financial crisis reflects weakness in the real economy of the US from its start. Our comparison with prior US recessions indicates that the epicenters of most of the recessions were in the financial sector and that recessionary pressure was present in the last quarter of 2007 in the US economy. The high level of nation's debts combined with a high rate of inflation show a difficult situation US policy makers face. At an international scene, there would be trade-off between protectionist policy measures and the US's role as a global sheriff. Effects of US policy measures, either monetary or fiscal, would be short-living, while more fundamental changes to create productivity gains would be the right policy for recovery of the US economy.

## 국문요약

본 연구는 서브프라임 금융위기가 근본적으로 미국 실물경제의 취약성을 반영하고 있음을 주장한다. 미국의 기존 경기침체의 역사를 비교해보면, 대부분의 경기침체의 중심은 금융부문에 있었고, 미국경제에는 2007년 마지막 분기에 이미 경기침체의 압력이 있었음을 알 수 있다. 높은 인플레이션율과 더불어 높은 수준의 외채는 미국 정책결정자가 처해있는 어려운 상황을 보여주고 있다. 세계적인 시각에서 보면, 보호무역주의적 정책과 세계 보안관으로서의 미국의 역할 사이에 반비례 관계가 있다. 통화정책 혹은 재정정책 등 미국의 정책은 그 효과가 단기에 그치고, 생산성 증대와 같은 좀더 근본적인 변화를 가져올 정책이 미국 경제의 회복을 위한 바른 정책이다.

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# Sub-Prime Financial Crisis and US Policy Choices

Yonghyup Oh and Wonho Song\*

## I. Introduction

The events subsequent to the problem that occurred in the sub-prime market of the US have been leading the US into a recession. The booming real estate markets and the debt-backed US economic growth during the last couple of decades have rendered this small segment of the US financial market attractive. But over-securitization of products in this category, despite its tiny size relative to the entire US financial market, has made it possible to exhibit wide-spread impacts on their lenders in the domestic market and across borders, particularly in other developed markets. The overt culprit is a combination of the weakened creditworthiness of some US customers and the poorly timed, aggressive securitization practices of mortgage finance intermediaries.

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While this market was probably not the most attractive one, it looks clear that it was the most vulnerable one.

It is surprising to see that it is in the financial sector that a problem happened, as this is a stronger side of the US economy. It is also true that financial market problems are more clearly visible and thus easier to notice than real economic problems. The US growth with debts, though regarded as an indicative of economic strength, had risks for the real economy. There have been warnings about problems related to trade deficits of the US and the US dollar exchange rates that called for concerted policy actions at an international level, relying on the US. It is therefore no wonder that many consider the sub-prime crisis to be not only financial trouble, but the beginning of extended economic troubles. Where could this crisis lead and how long would it take until the situations are stabilized? What could the US do to stop further deterioration and improve outcomes? What would the consequences of the US's potential policy actions be for the US economy? What would happen to the rest of the world in this process and how would it react?

This paper discusses these questions and attempts to assess US policy choices. Interest rate cuts by the US as a core measure would indeed make US debts cheaper, alleviating the burden of US households and may depreciate further the US dollar, helping to reduce trade deficits. Increasing government expenditures, tax cuts, or rebates, on the other hand, would help pay out part of household debts like mortgage loans and improve the overall solvency of US households. Whereas these measures were the immediate ones that the US government took, pessimism has been reigning regarding their effectiveness. The sub-prime

crisis reflects financial and economic fragility of the US, which was aggravated in the period leading to the event. Financial fragility may be characterized as resulting mainly from the mismatching regulatory system to the risks that new financial products posed, whereas economic fragility is a result of the peculiar nature of the US economic development in recent decades, namely its debt-driven growth. Globalization plays an important part as a cross-border contagion, in particular on the financial side. It is a crisis that affects both the financial market competitiveness and real economic conditions of the US, and probably much less in the rest of the world.

The paper focuses on the real economy, and not the sub-prime market or general financial market of the US. Current US policy focuses on stabilizing the financial market by providing liquidity to the market. While this helps to prevent crisis from proliferating, reservations remain regarding whether the US is able to weather the economic downturn following the crisis.

The paper proceeds as follows. We discuss the link between the sub-prime financial crisis and the current economic troubles of the US. Then we compare the present US economic conditions to those of the initial stages in the major US recessions since the Great Depression. We discuss what sorts of policy choices to which the US is disposed and attempt to assess the effectiveness of main policy shocks within a two-country, shock-response framework. Concluding remarks follow.

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## II. Origin of Subprime Crisis: Weakness in Real Economy

The US's liability and trade deficits are still growing. Recovery from this situation is limited when the dollar is weak. The international competitiveness of US industry and products has faced challenges, in association with renovation and prices during the last 20 years, in particular from newly developing countries. Foreign capital flew into safe assets in the US after the Asian Financial Crisis, but this option is not seen as being as attractive as it once was.

The real estate market continues to decline and this squeezes the nation's propensity to consume, which creates recessionary pressure in the US. This pressure causes instability in the employment market, further contracts the domestic market, and there is danger of the recession being realized. What could be worse, the US economy may fall into a long-term recession, just as Japan did.

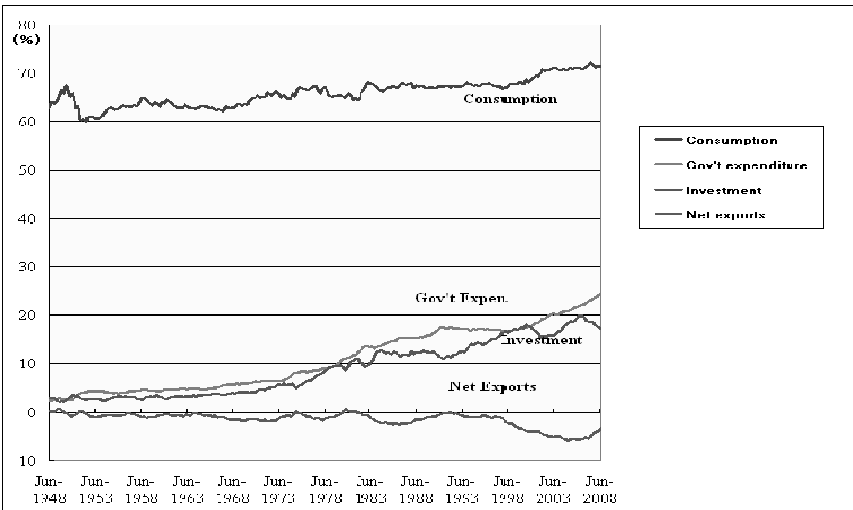
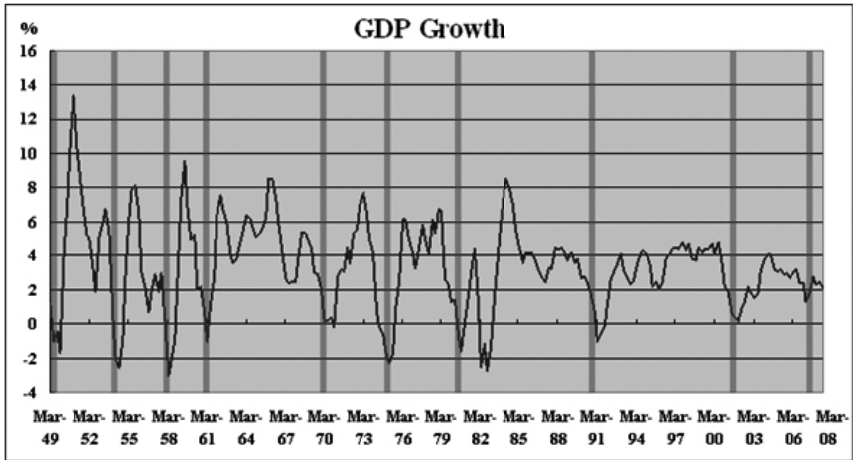
In December 2007, the US job market showed signs of contraction for the first time in five years. Specifically, the largest range of employment declines came from the service sector. Last year, most international institutes expected the US growth rate to be about 2%, but the view of the depression is getting more consistent, as the IMF changed their expected growth rates to 1.3%.<sup>1</sup>

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<sup>1</sup> As of July 17, 2008.

Figure 1. US GDP Growth

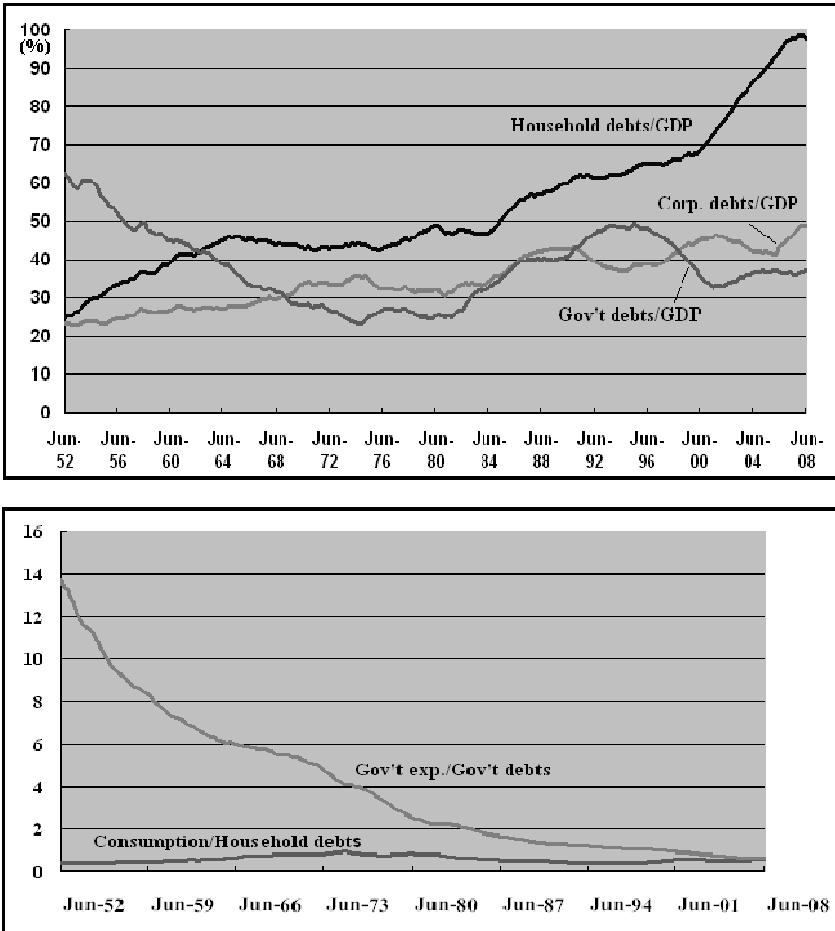
(Unit: %)



Source: Bloomberg, NBER for recessions.



Figure 2. US Debts



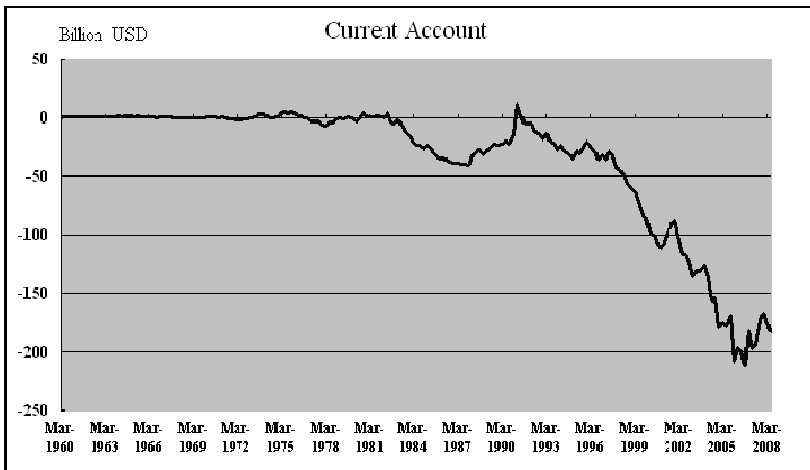
Source: Bloomberg

Economic recession is a term that is used officially when a country goes through negative growth for at least two consecutive quarters. Therefore, the recession of the US economy is not yet actually con-

firmed. According to NBER’s report on July 31, 2008, the US economy recorded negative quarterly growth of -0.2% compared to the previous quarter during the last quarter of 2007. However, the US economy showed positive growth rates—0.9% and 1.9%, respectively—during the first and the second quarters of 2008. Nevertheless, we cannot exclude the possibility that the US economy has already entered the initial stage of recession. What is evident is that the slowdown of the US economy is a reality and the possibility of a hard landing has recently increased.

The US economy is facing challenges, both internally and externally, in the financial and real markets. What makes this more problematic is that these challenges have been developing for a long period of time, not in the short term.

**Figure 3. US Current Account Balances**

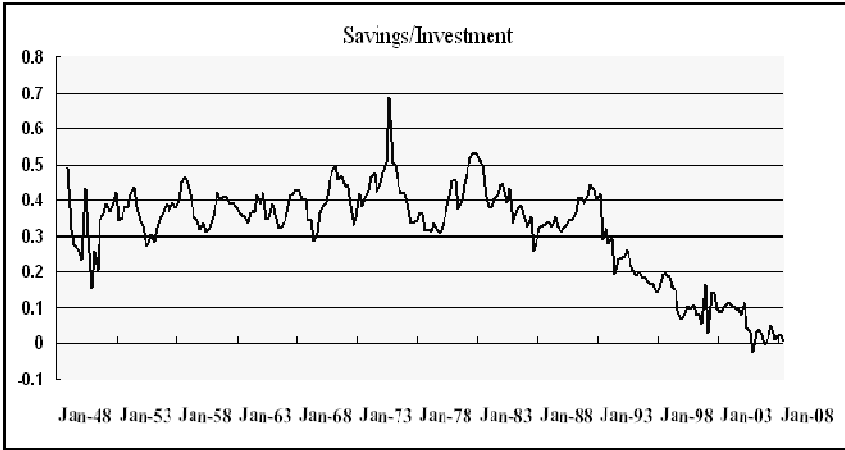


Source: Bloomberg

The subprime mortgage crisis is a burst of vulnerability that reigned in the real economy as well as in the financial sector of the US. US growth is in downward correction, with the five-year average growth rate being 3% until 2007, with a drop to a rate of 2.5% in 2007, and a further drop this year. The current account deficits have continued to increase. Industrial productivity has also weakened. Whereas there is little change to savings rates, concerns arise about inflation.

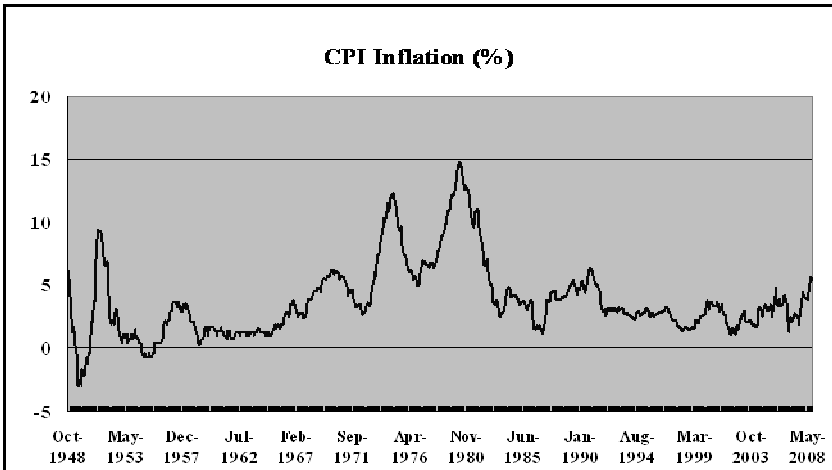
The main reason for loss of growth momentum could be associated with the decline of previously strong consumption, which reached more than 70% of the GDP. At the end of 2007, the average debt-to-disposable-income ratio per household was 130%, and most individual debt was used to purchase housing. Housing costs in the US (S&P/Case-Shiller's housing index) have declined since in the market peaked in 2005. Mortgage companies' lending conditions have been complicated and the investment rate in homebuilding has fallen rapidly since 2005. This clearly means that the real asset market is slowing. The possibility of households filing for bankruptcy will increase if the market interest rates do not continue to decline when the real estate market is falling. The recent policy of interest rate cuts is effective to protect individuals from bankruptcy. It is difficult, however, to expect the real asset market to be revitalized throughout the whole market, so its effect on individual consumption is thought to be small. The evident recession in homebuilding during the last two years provoked the subprime mortgage crisis.

Figure 4. Savings/Investment Ratio



Source: IMF.

Figure 5. US Inflation



Source: Bloomberg.

It is highly likely that the US economy will have a low economic growth. Inflation pressure is getting weak. Most of international forecasters forecast negative growth in 2009 for the US. The US economy needs build up growth energy which could be a long process and it looks a tough target to attain a growth rate of 3 per cent at the end of the tunnel.

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### III. A Historical Perspective

How bad is the current situation? We identify at least 13 recessions in the US since the Great Depression<sup>2</sup>. While the starts of these recessions were often in the financial sector, all of these affected the real economy. With those for which we have data, that is post-Second World War, we compare the starting conditions of these recessions.

**Table 1. Past Recessions**

	<b>Period</b>	<b>Duration in Months</b>
<b>1</b>	Aug., 1929–Mar., 1933	43
<b>2</b>	May, 1937–Jun., 1938	13
<b>3</b>	Nov., 1948–Oct., 1949	11
<b>4</b>	Jul., 1953–May, 1954	10
<b>5</b>	Aug., 1957–Apr., 1958	8
<b>6</b>	Apr., 1960–Feb., 1961	10
<b>7</b>	Dec., 1969–Nov., 1970	11
<b>8</b>	Nov., 1973–Mar., 1975	16
<b>9</b>	Jan., 1980–Jul., 1980	6
<b>10</b>	Jul., 1981–Nov., 1982	16
<b>11</b>	Jul., 1990–Mar., 1991	8
<b>12</b>	Mar., 2001–Nov., 2001	8
<b>13</b>	Sep., 2007 (?)	

Source: NBER.

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<sup>2</sup> Rogoff and Reinhart (2008) classify at least 18 financial crises in the US since the Second World War.

There generally are both real and financial causes behind these recessions, but it is always the case that real sectors are hit in these recessions. Massive bank failure in excess debts and the stock market crash (1929) combined with under-consumption and over-investment was the

**Table 2. Comparison with US's Past Recessions**

**A. With Bretton Woods Recessions**

		2007 Q4	1948 Q4	1953 Q3	1957 Q3	1960 Q2	1969 Q4
<b>GDP contribution (%)</b>	Consumption	71.43	64.22	60.81	63.31	64.08	64.25
	Investment	14.89	17.84	15.06	15.69	15.15	15.34
	Gov't expenditure	19.65	15.81	23.69	21.42	20.81	22.4
	Net exports	-3.6	0.91	-4.83	-1.61	-2.59	-5.52
<b>Debts (%)</b>	Gov't debts/GDP	36.37					
	Corp debts/GDP	44.94					
	Household debts /GDP	98.16					
	Total debts/GDP	179.47					
	Consumption /Household debts	0.73					
	Gov't Expenditure /Government debts	1.31					
<b>CA balances</b>		-172.94				0.53	0.36
<b>Inflation</b>		4.12	2.73	0.97	3.54	1.71	5.89
<b>Interest rates</b>		3.37	1.04	1.94	3.26	2.95	6.69
<b>Saving rate/ Investment rate</b>		0.89 (2007Q1)			1.39	1.39	1.29
<b>Productivity- manufacturing sector</b>		187.5					

## B. With Post-Bretton Woods Recessions

		2007 Q4	1973 Q4	1980 Q1	1981 Q3	1990 Q3	2001 Q1
<b>GDP contribution (%)</b>	Consumption	71.43	64.76	65.15	64.46	67.21	69.39
	Investment	14.89	17.99	18.54	18.65	14.82	16.72
	Gov't expenditure	19.65	20.16	20.06	19.77	20.2	17.79
	Net exports	-3.6	-2.6	-0.62	0.28	-0.99	-3.97
<b>Debts (%)</b>	Gov't debts/GDP	36.37				42.71	33.75
	Corp debts/GDP	44.94				43.36	45.56
	Household debts /GDP	98.16				61.48	71.5
	Total debts/GDP	179.47				145.13	150.83
	Consumption /Household debts	0.73				1.11	0.95
	Gov't Expenditure /Government debts	1.31				3.51	1.89
	<b>CA balances</b>		-172.94	3.38	-3.46	2.08	-21.54
<b>Inflation</b>		4.12	8.94	14.59	10.96	6.16	2.98
<b>Interest rates</b>		4.72 (2006Q4)	7.03	11.62	14.08	7.51	3.45
<b>Saving rate/ Investment rate</b>		0.89 (2007Q1)	1.23	1.09	1.16	1.08	1.04
<b>Productivity- manufacturing sector</b>		187.5				94.5	139.5

Notes: Interest rates 91-day TB.

Sources: Bloomberg and IMF.

cause of the Great Depression of 1930s. The policy choice was known as New Deal, in which government intervention was actively exercised. The recession that started in 1937 did not have much to do with the financial sector: Massive strikes in New Deal sectors and profit deteri-



oration were major causes. The collapse of the Bretton Woods system and high inflations with surging oil prices describe recessions in 1970s. Contracting monetary policy responses that reacted to high inflations led to recessions in early Reagan period. Recently the collapse of Dot-com bubble and NASDAQ was a major epicenter that led to a recession. Whether the causes were directly related to the financial sector or not, recessions always take effects in real sectors. Note that even the short living 2001 recession might have not taken place without the Asian financial crisis which ceased high growth in the region.

Policy measures taken during these recessions vary from day-light saving time (1970s) to New Deal (1930s). Deregulations in 1980s which opened a door to expansion in financial institutions, tax cuts (1950s) and interest rate cuts (1950s and 1970s) were effective policy choices at the time.

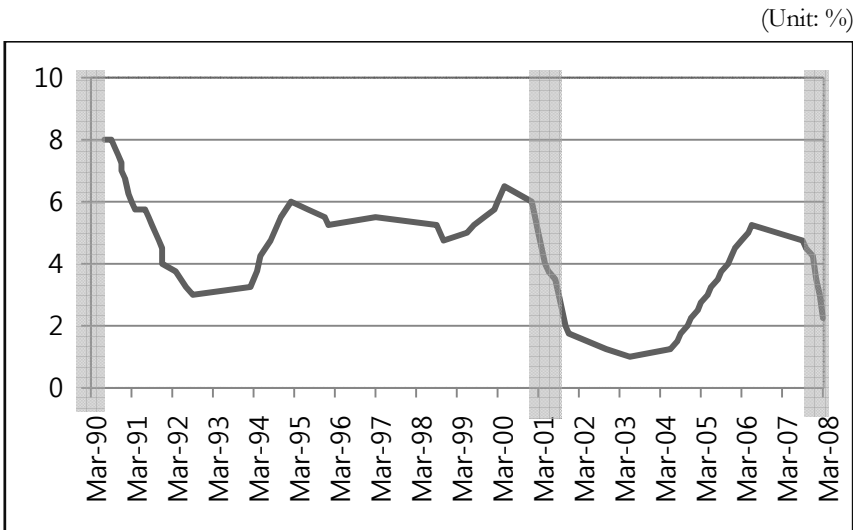
The above tables show that the current US economic states are not better than the initial states of the prior recessions. Consumption is at the record highest, as well as household debts and current account balances. It is clear that the US economic growth backed by consumption depends heavily on debts. This is an essential feature of the internal imbalances of the US economy. It is probably fair to say that this is not sustainable.

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## IV. US Policy Choices

The interest rate cuts are an attempt to “kill two birds with one stone”, appeasing US financial market uncertainty and reducing concerns about the recession of the US economy. The views on the actual effectiveness, however, are controversial. The evaluation can be summarized as follows: Despite the temporary effects of stabilizing the financial market by decreasing interest rates, the reorganization of the international financial market is somehow inevitable. The effect on US real economy will be limited because of inflation.

**Figure 6. US FED Target Rates**



Source: FRB.

It is likely that the consumption and investment rates are likely to fall as the upward pressure accumulates in the prices of consumer goods and wages because of the rising inflationary pressure. The \$150 billion in tax rebates that the Bush administration asserted in early 2008 are likely to be used not to stimulate consumption, but first to redeem individual liabilities such as mortgages, automobile installments, and credit debt, which are estimated to be about 18.7% of total personal assets.

On the other hand, while the depreciation of the dollar would help to improve trade balances, the decreasing values of dollar-denominated assets with the depreciation of the dollar make the overall effects not very clear.

While interest rate cuts were often effective in helping the economy out of the recession in the past, it is not evident today which effect will dominate with the interest rate cuts, as the effects are contradictory within financial markets and in the interaction between financial markets and the real economy. What seems to be clearer is that the US's recent interest rate policy has responded to the needs of the financial markets. Note that the financial markets tend to be affected by various signals and move in ways that are rather self-fulfilling, and occasionally participants in financial markets may be induced to make signals to the markets. The US's interest cuts since September 2007 are a response to the liquidity shortage of the financial markets, although at the expense of potential inflation risks. Consider, for instance, soaring oil prices. The present condition of the real economy is different compared to when the FRB decreased the target interest rate by 1.75 percentage

points when the recession signals surfaced shortly after September 11, 2001.

In the long run, however, the effect of interest rate cuts on the US financial market would tend to be mitigated. The devaluation of dollar-denominated assets will accelerate the outflow of financial capital from the US market. This could weaken the US financial market's competitiveness and could be followed by employment contraction or devaluation of US consumers' assets.

If the US government recognizes that its debt situation is the primary policy priority, it is logical for them to look into ways to induce consumption into more domestically produced products. This requires strengthening US companies' competitiveness in global markets. The US cannot afford to have less consumption, as consumption sustains national economic growth, while increases in savings relative to investment, rendered possible by less relative consumption in the GDP components, are needed to correct current account surpluses. Less consumption is also desirable, as consumption, not having recourse to borrow, is healthy. This is one of the characters defining the inherent contradictions on the effects of the US's economic policies.

The Anglo-Saxon business and legal systems prevailed in the wave of globalization during the 1990s. From 1991 until 2007, the US economy enjoyed an economic boom except for two very short periods. This has contributed to English becoming the international standard language. New York emerged as the best global financial center, as was London.

While the US has been the most influential driving force behind

globalization, it has also become the country with the largest trade deficit in the world, and the epicenter of a financial crisis. The US is a leader in free trade, having created GATT, and it is a leader in international finance, having created the World Bank and the IMF. The World Bank and the IMF have started a restructuring program for their governance systems. Are we entering an era in which the US's role as global economic leader faces a change?

The best economic policy for the US is to strengthen the international competitiveness of its corporations and reduce its dependency on foreign debts. This policy should include measures to induce a change in capital structure of US ownership in foreign companies as well. It is desirable that the competitiveness of US products must be enhanced so that US citizens will buy US products. However, there is danger that the US might strengthen its level of protectionism, in which case the US has to give up, to a large extent, its leadership in the global economic and political systems.

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## V. How Would the US Respond to Policy Shocks?

Next we estimate the responses to some policy shocks. The shocks are of four types: government debt shock, monetary policy shock, productivity shock, and import tariff shock. We first briefly describe our model to be used for the analysis.<sup>3</sup>

The analytical framework employed is a 2-country version (US and the rest of the world) of the IMF's Global Integrated Monetary and Fiscal Model (GIMF), a New Keynesian open-economy general equilibrium model suitable for an integrated evaluation of monetary and fiscal policies. This is a state-of-the-art dynamic general equilibrium model of the kind that is increasingly being deployed at central banks around the world, but with a far wider range of fiscal features. Like a conventional business cycle model, GIMF incorporates a range of nominal and real rigidities that are useful for short-run business cycle analysis, and an interest rate reaction function that is common in Inflation-Targeting countries. In addition GIMF incorporates multiple and powerful non-Ricardian features that give an important role to fiscal policy, because in a non-Ricardian model the timing of taxes and transfers affects economic activity. These features include: overlapping generations of agents; life-cycle income profiles; liquidity-constrained consumers; and multiple distortionary taxes. This framework makes it

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<sup>3</sup> This part of model introduction heavily depends on Kumhof and Laxton (2007).

meaningful to also incorporate a fiscal policy reaction function. For more details of the model, the readers are referred to Kumhof and Laxton (2007).

The calibration of the model is based on Kumhof and Laxton (2007). Because GIMF is a general equilibrium model, its steady states need to be calibrated before any shock can be run to assess the impact of various policies. To that effect, the steady state GDP ratios and other macroeconomic variables are derived from the national accounts, while structural parameters are largely adapted from the literature (Laxton and Pesenti (2003), Bayoumi, Laxton, and Pesenti (2004)). Because we are interested in assessing monetary as well as fiscal policy reactions to shocks, we relied on a quarterly version of the model.

Now, we discuss the results from the simulation exercises. First, we see the effects of the one percentage point increase of government deficit ratio. For this shock, we raised the government deficit/GDP ratio by 0.25 percentage point permanently. As a result, GDP rises slightly about 0.02 percentage points for three years, but turns to negative after five years. Thus, the effect on GDP growth is minimal and short-lived. The shock affects consumption positively. Investment also increases but declines to negative growth after six years. The US economy suffers current account deficits due to government deficit.

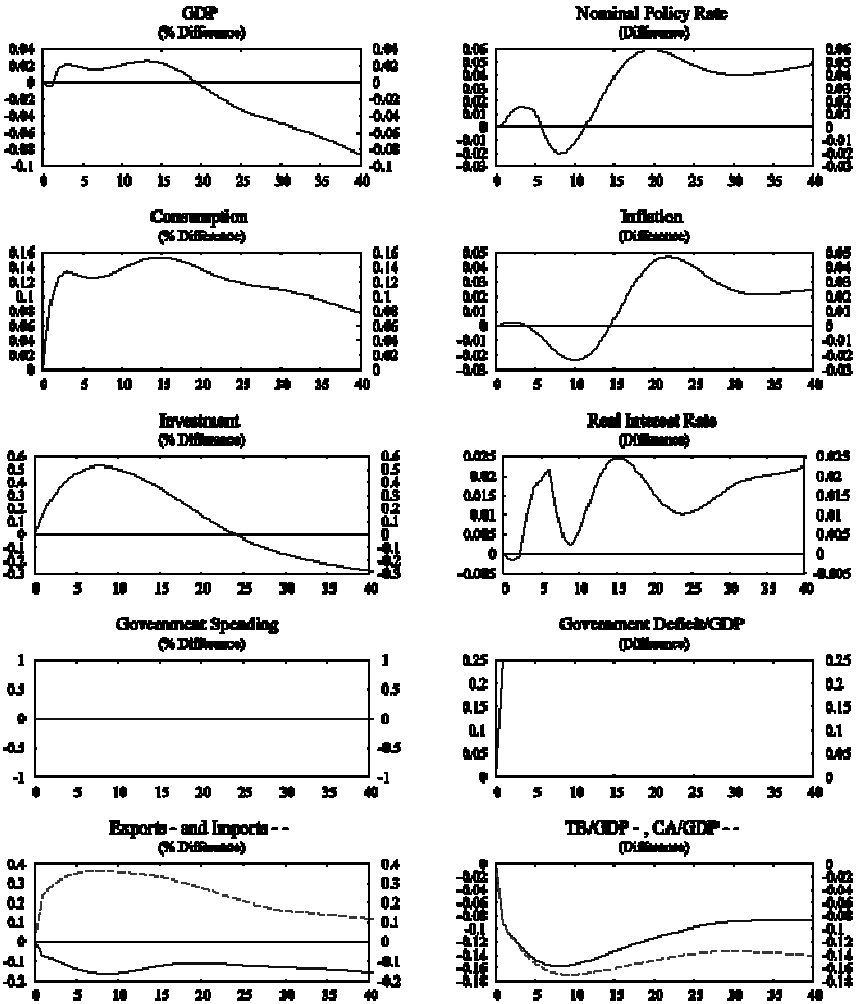
Second, for monetary policy shock, we reduce nominal interest rate by one percentage point for one year. In response, real interest rate drops by about 0.9 percentage point but returns to zero rather quickly because inflation rate adjusts. Thus, the monetary policy affects GDP as well as consumption and investment only in the short period of time.

Third, we consider productivity level shock by increasing the productivity parameter by one percent. As is well known, this shock has permanent effects and thus GDP, consumption and investment increase permanently. Nominal interest rate, inflation, government deficit all return to their original steady state after three years. However, current account balance is positive even after five years, thus increasing domestically produced goods.

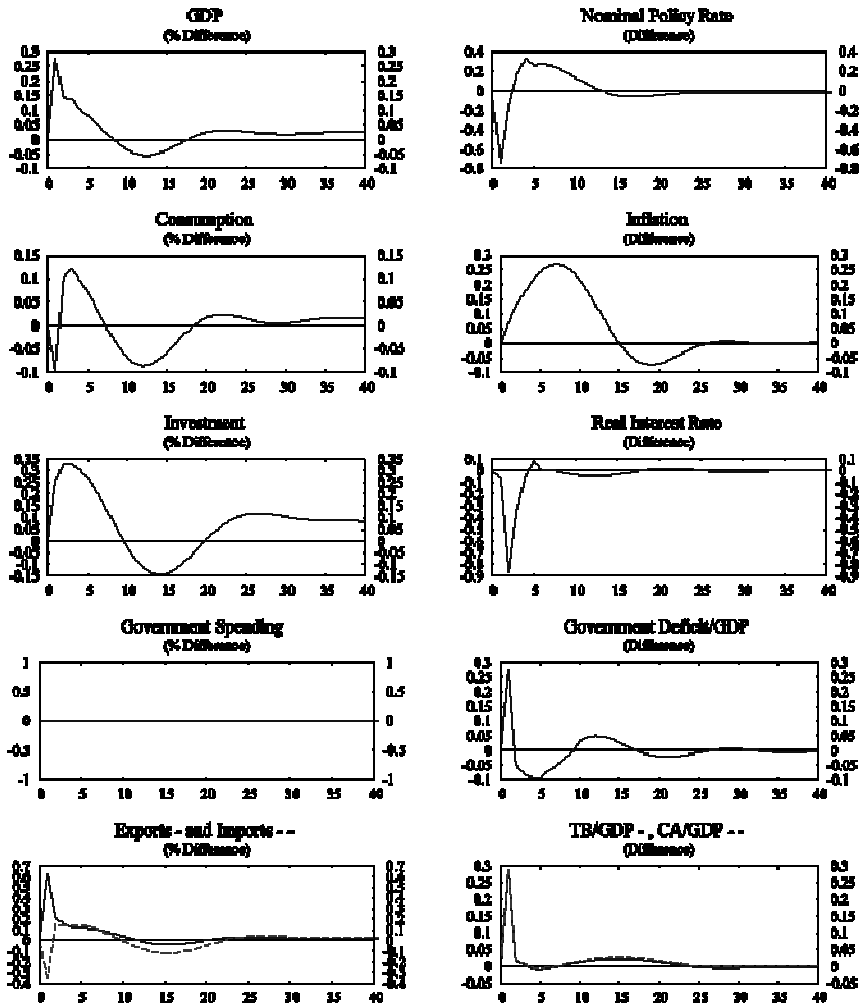
Fourth, we turn to the effects from higher import tariff shock. Since the model is not equipped with import tariff parameter, we use higher imported tradables inflation as a proxy. We raise the imported tradables inflation by one percentage point and observe its effects on the US economy. Due to the shock, GDP, consumption and investment decrease. Imported tradables inflation returns to normal immediately because exchange rate appreciates immediately accordingly. In the long run, inflation adjusts to zero, and GDP, consumption, investment, and real interest rate all decrease.



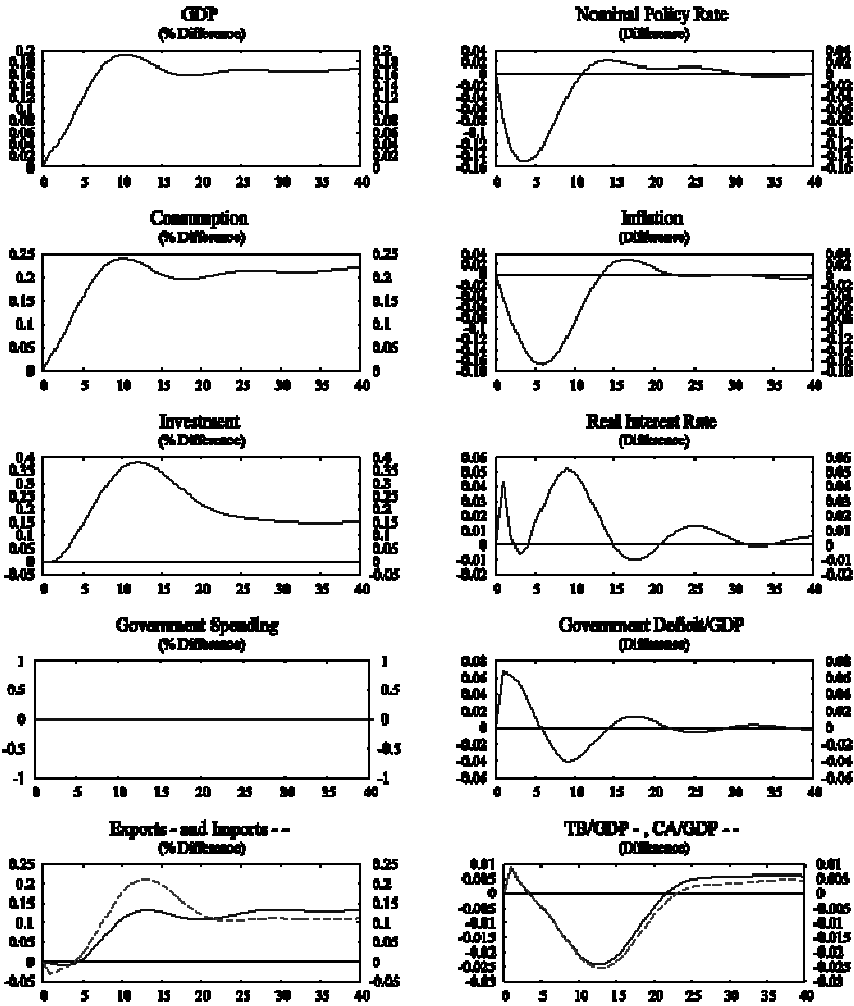
Figures 7. Policy Shocks-Responses: Government Debts



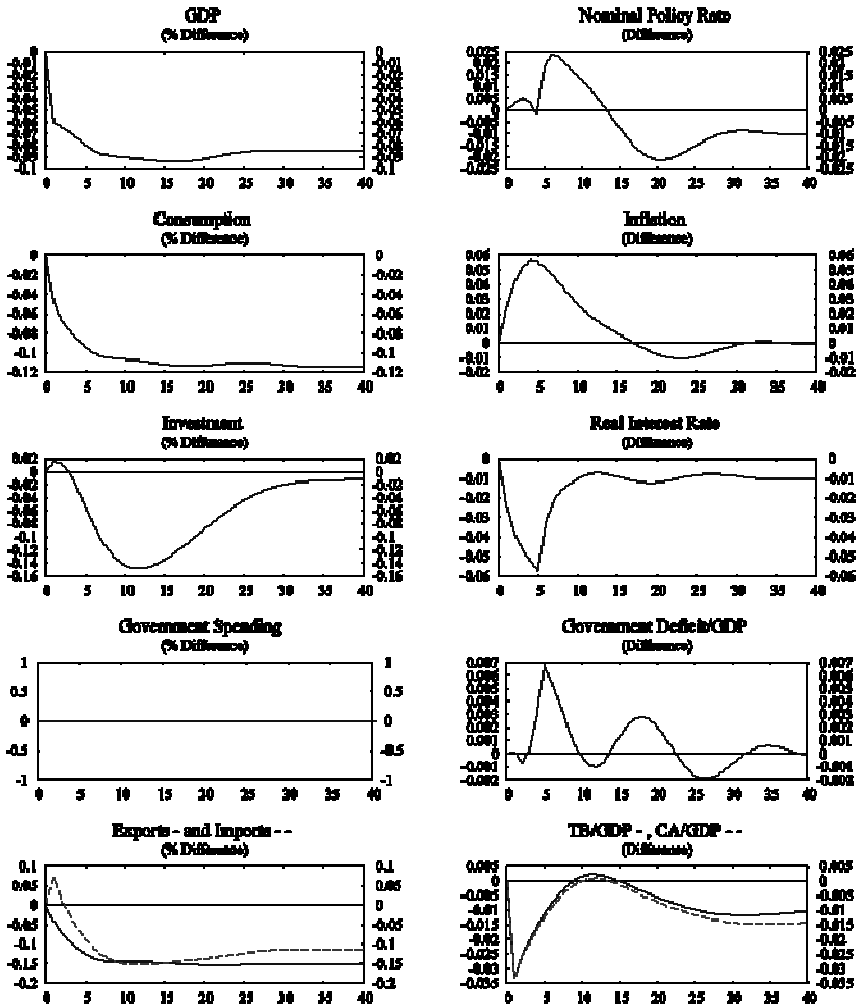
Figures 8. Policy Shock-Responses: Monetary Policy (Interest Rate Cut)



Figures 9. Policy Shock-Responses: Productivity Shock



Figures 10. Policy Shock-Responses: Imported Tradables Prices



In this section, we considered four US policy choices. Our exercises show that only productivity shock induces GDP growth improvement persistently, increasing domestically produced goods. Other policies such as government debt shock, monetary policy shock, and import tariff shocks did not help to boost US economy.

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## VI. Concluding Remarks

This paper argues that the current subprime financial crisis bears strong implications to real economic situation of the US. We have compared the current situation to past recessions and discussed inherent contradictory characters of the US economic problems that a good policy mix is difficult to draw. We then tried exercises on effectiveness of US policy measures, be it monetary, fiscal or focusing on industrial competitiveness. We find industrial competitiveness is a right choice, though this is a long-term target. We argue that efforts to restore industrial competitiveness could precipitate protectionism and pose a threat to the US's leadership in the global governance architecture.

A related question is how much the recession of the US economy may impact to the rest of the world. It depends how much emerging economies, led by the BRICs, would compensate the loss of growth energy in the US economy. (*Financial Times*, Giles C. et al., March 2008.). For the US, the ultimate turnaround will be brought about if the US's industrial competitiveness recovers. We show that only productivity gains will induce the US economic growth in a longer run, while the effects of other policy measures live short. This will depend on the flexibility of the US economy and the ability to reinvent its industries, just as the US has done in the past.

The new G-20 regime at the summit level will play an important role. A new global financial architecture and its new international

standards of financial regulation and oversight will substantially affect the US market and the rest of the world. Could this be possible without protectionist measures? It would be very hard for the US government to exercise this type of measures given its position in the global economy.

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## Sub-Prime Financial Crisis and US Policy Choices

Yonghyup Oh and Wonho Song

This paper argues that the subprime financial crisis reflects weakness in the real economy of the US from its start. Our comparison with prior US recessions indicates that the epicenters of most of the recessions were in the financial sector and that recessionary pressure was present a year ago in the US economy. At an international scene, there would be trade-off between protectionist policy measures and the US's role as a global sheriff. Effects of US policy measures, either monetary or fiscal, would be short-living, while more fundamental changes to create productivity gains would be the right policy for recovery of the US economy.

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