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POLICY OF FINANCIAL CRISIS

The Analysis of Asian Countries

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Abstract

In 2007, the U.S. subprime mortgages problem greatly frustrated the investors' confidence, and lifted the curtain on the Global Financial Tsunami. The stock market started to fluctuate. This financial crisis began with making the U.S. stock market seriously bearish and the global stock market downturn came after. We can see that the financial tsunami has a great impact on the global economy.

During the financial crisis, Asian countries have been hit hardly. However, they still had outstanding performance in recovering and maintaining their growth. They implemented a lot of policies which we were very interested in. Therefore, we wanted to study more into it. According to our reference, we generalized five policies. Among those policies, we would like to study deeply into lowering interest rate and consumption coupon. Why we choose these two policies is because each country in Asia did the policy of lowering the interest rate. And both Taiwan and Japan government have given consumption coupon which is very relative to our daily life. Therefore, we choose these two policies to analyze. We tested these two policies' success or failure, and concluded both lowering interesting rate and consumption coupons are ineffective.

After the research, we hope that we are able to figure out how the Asian governments should develop policies to cope with the financial tsunami.

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Reference

I. The Causes of Financial Crisis

Started from 2007 to 2008, the whole global economy face a huge financial crisis, also called Financial Tsunami. The crisis could trace back to the collapse of subprime-mortgage market in the United Stated. Investors lost their confidence in loan securities and so caused the liquidity crisis, occurred when a business experiences a lack of cash required to grow the business. Even though many central banks all over the countries injected lots of money into the market many times, they still can't stop the burst of this financial crisis. In 2008, this financial crisis started to lose control, lead to many financial institutions which influences the global economy a lot went bankruptcy or were taken over by the government.

The collapse of subprime mortgage in the U.S.

To understand the causes of the financial crisis, we can chase back to the collapse of subprime mortgage in the U.S.A. Subprime mortgage refer to lending institutions lend money to subprime borrowers who have lower credit rating and lower income therefore have higher possibility to default on the loan they borrow. Due to its high reward comparing with average mortgages, subprime mortgage had became more and more popular in those years.

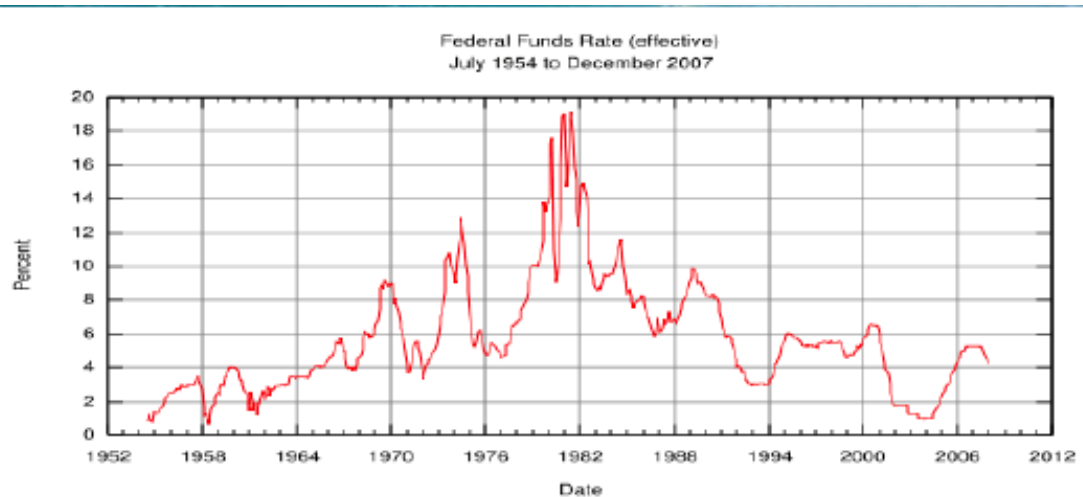


Figure 1: Federal funds rate

We can notice from Figure 1 that started from 2000, the federal funds rate decline sharply. And that caused lots of subprime borrowers started to take out mortgages and purchase home, so subprime mortgage market grew rapidly. Unfortunately, after subprime borrowers passed through a time of low interest rate, they then faced a difficult situation. In 2004 to 2006, the federal funds rate increased hugely and that caused lots of subprime borrowers could not afford to their mortgages. So mortgages default largely and the subprime mortgage market collapsed.

The Financial Innovation

Human are always greedy. Once we get some properties, we still want them to become much more valuable. The financial innovation is one of the methods to make something valuable. One of the financial innovation is collateralized debt obligation (abbreviate to CDOs). It is a type of structured asset-backed security (ABS) whose

value and payments are derived from a portfolio of fixed-income underlying assets. And its components contain lots of debts like student loans, credit card debts and subprime mortgages. After counted and repackaged by financial engineers, the subprime mortgages can be more valuable by packaging into the CDOs. . But due to it is a brand-new product, there is no historical data could help to count on its real value. The mathematical model became the only one method to evaluate real CDOs value. When the inputs used in the model are wrong, it just become so called “Rubbish in, Rubbish out”. Bubbles at this same time multiply.

CDOs market is like a gold mine founded by greedy investors, in 2006, estimated 100 billion subprime mortgages have been packaged into the CDOs which value 375 billion dollars. When the subprime mortgage defaulted due to the high interest rate, the hundreds of billions bobbles burst. And those investing banks which have a very big role in whole global economy like Bear Stern and Lehman Brothers making their living by this kind of product (bubbles) went bankruptcy. And that influenced the whole global economy. It is just what we called “financial tsunami.”

II. Impact to Asian countries

In September 2008, the crisis has spread quickly to Asia and has dramatically affected its economies. Unlike Europe, Asian countries were not heavily exposed to U.S. securitized assets. Therefore, according to some materials we have read, we found that the impact to Asia is mostly from the decrease in export. These falls resulted mostly from the collapse in demand for consumer durable goods, like automobiles, electronics, and other consumer durable goods.

In our research, we will focus on four Asian countries, Taiwan, Japan, Korea, and China. According to IMF, we divided Asian countries into two groups. One is advance countries, and there are Taiwan, Japan, and Korea. Another is developing country, and there is China. In these two groups, we found that they have different impacts from the financial crisis.

The advance countries declined their economies at rates between 10 percent and 25 percent. The advanced economies in Asia are taking the hardest hit, given their greater exposure to the decline in external demand in other advanced economies, especially for automobiles, electronics, and investment goods.

In China, because the export sector is a small share of the economy, its GDP still continued to grow.

From the following four figures, we can clearly understand their GDP trends.

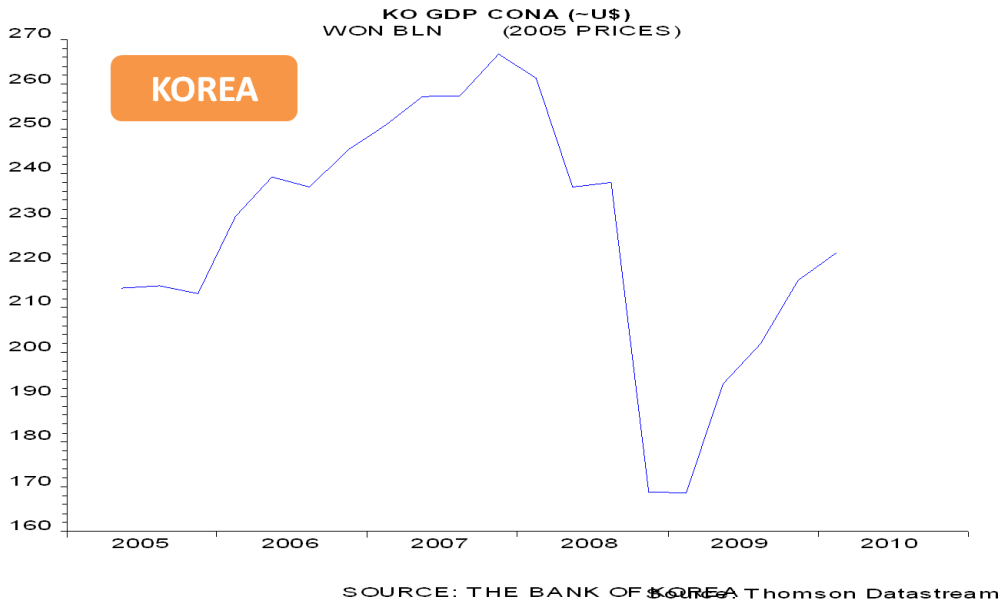


Figure 2: Korea GDP

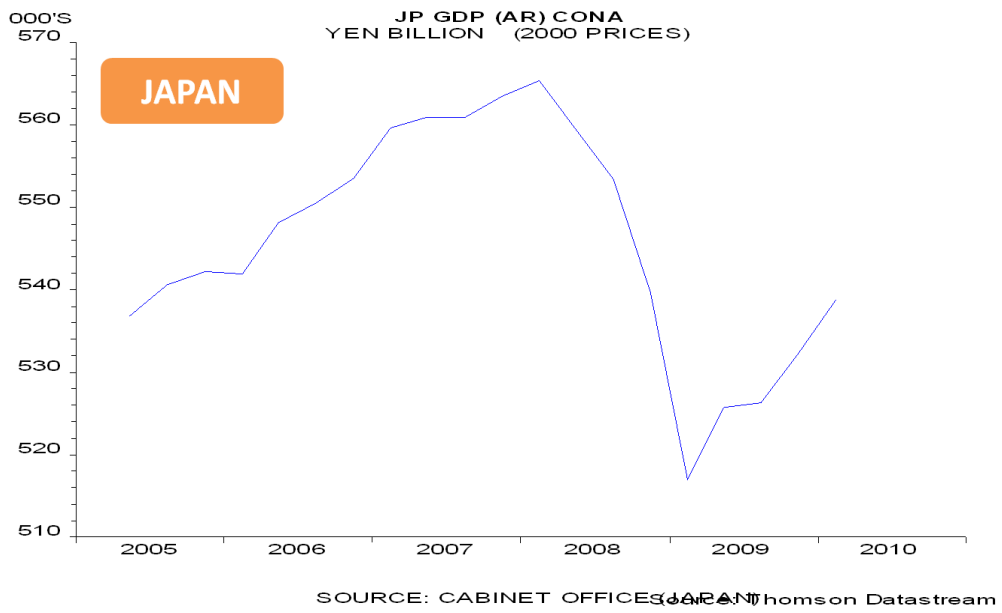


Figure 3: Japan GDP

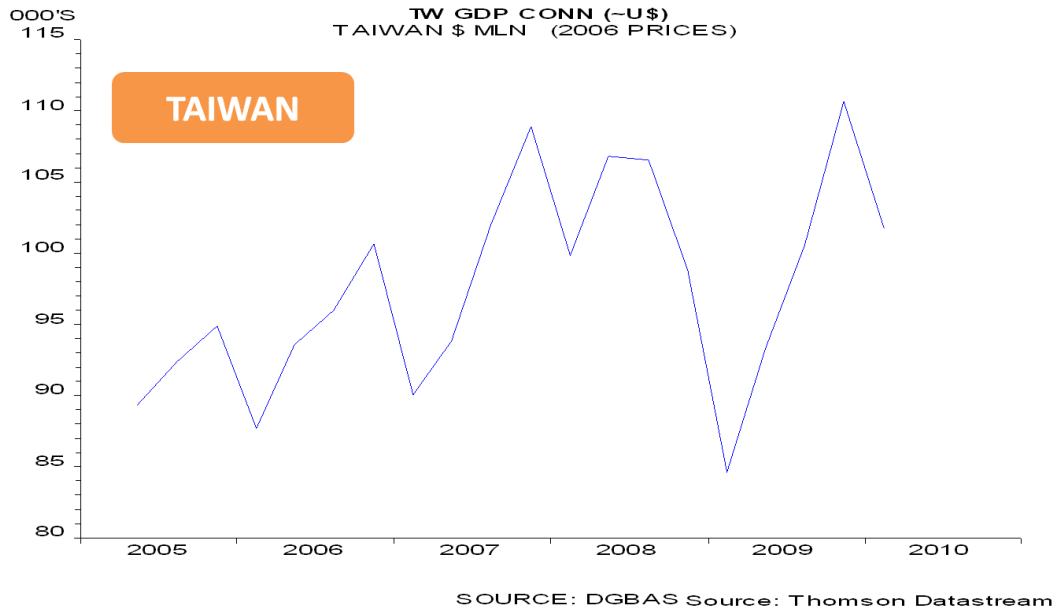


Figure 4: Taiwan GDP

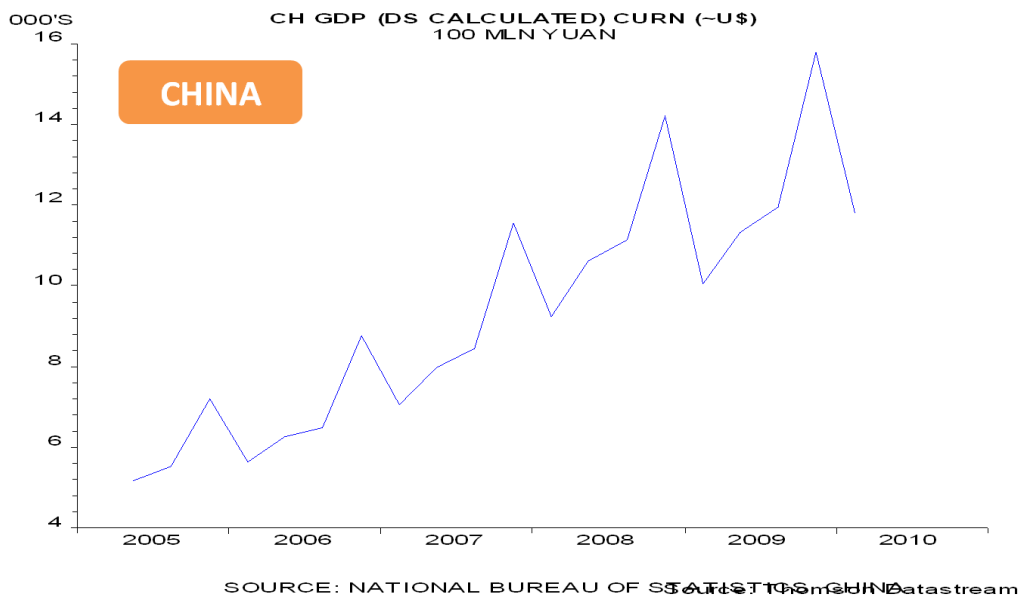


Figure 5: China GDP

The horizontal axis is year, from 2005 to 2010, and the vertical axis is their money in billion. We can find that in Korea and Japan, their GDP have almost the same trends. While in Taiwan and China, their GDP go up and down.

In advance Asian countries (Taiwan, Japan, and Korea), their GDP were affected

by financial crisis and declined from about September 2008 to February 2009.

Contrary to advanced countries, China's GDP continued to grow and wasn't affected by the financial Tsunami.

Due to the impact on Asia, the government has acted aggressively to provide major fiscal stimulus and monetary easing, which are helping boost consumption and infrastructure investment.

According to the policies which Asian countries did, we pick up five main policies and divided into two parts. One is fiscal policy, and there are consumption coupon, fundamental building, tax, and expanding internal markets. Another one is monetary policy, and there is a policy about interest rate.

Fiscal Policy	Monetary Policy
<ul style="list-style-type: none">• Consumption coupon• Fundamental building• Tax & internal market	<ul style="list-style-type: none">• Interest rate

Table 1: Policies

In the following research, we will focus on the consumption coupon and the interest rate policy.

III. Policy Analysis

After introducing several policies that implemented in Asian countries responding to the financial crisis, we chose two policies to do further research and examination. These two policies are the policy of lowering the national interest rate and releasing the consumption coupon. The reasons why we chose these two policies are that almost every country in Asia did the policy of lowering the national interest rate. As for the policy of consumption coupon, it is a special policy that adopted by Taiwanese government, and it's also the policy which is most close to people's daily life, and we found it very interesting to study. Therefore, we decided to focus on these two policies to analyze.

Policy of Lowering the Interest Rate

After the financial crisis severely hurt the Asian economy, almost every Asian country implemented the policy of lowering the interest rate, causing the interbank rate of Korea, China, Taiwan and Japan dropped hugely at the mid of 2008. As for Japan, the

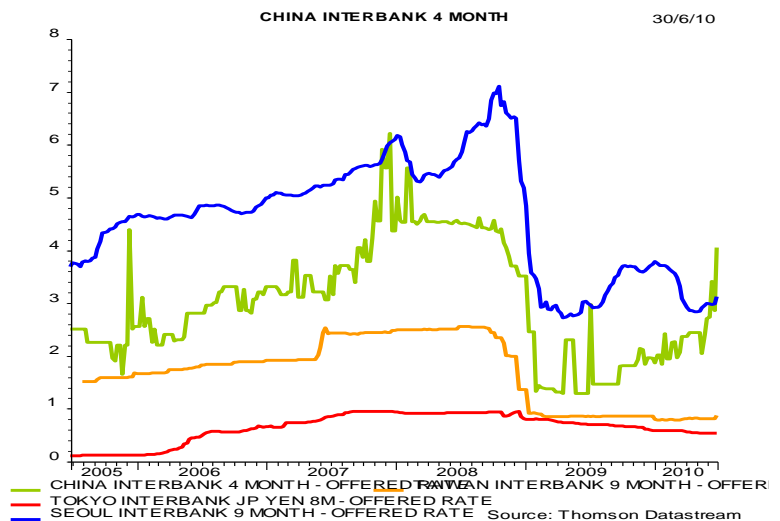


Figure 6: Interbank Rate

government actually has cut its interest rate as well, but its interest rate was already

at a very low level, therefore the degree of decrease is relatively small.

As we know from the textbooks of Macroeconomic, the main target of this policy is to stimulate the domestic investment. To describe in more detail, a nation's GDP generally consists of domestic consumption, investment, government purchase and net export.

$$Y = C + I + G + NX$$

We also know that $I/Y = a - b(R - r)$. So it's not hard to find that interest rate and investment are negatively related, and as the result, when the government cut the interest rate, the domestic investment will rise, and lead to an increase in GDP.

Therefore, theoretically, after the governments implemented this policy, the GDP of these countries should rise.

To examine the result, we collected the data of the GDP for these four countries of the last five years and drew it to a comparison graph shown below. However, we found it quite weird that the GDPs of these countries seem not having much change after the government lower the interest rate at the mid of 2008.

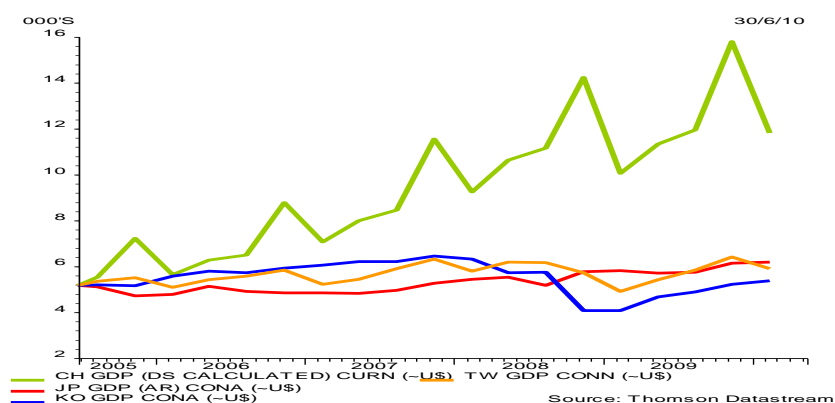


Figure 7: GDP

We then checked on the relationship of GDP and interbank rate of these countries individually. Shown on the right are the

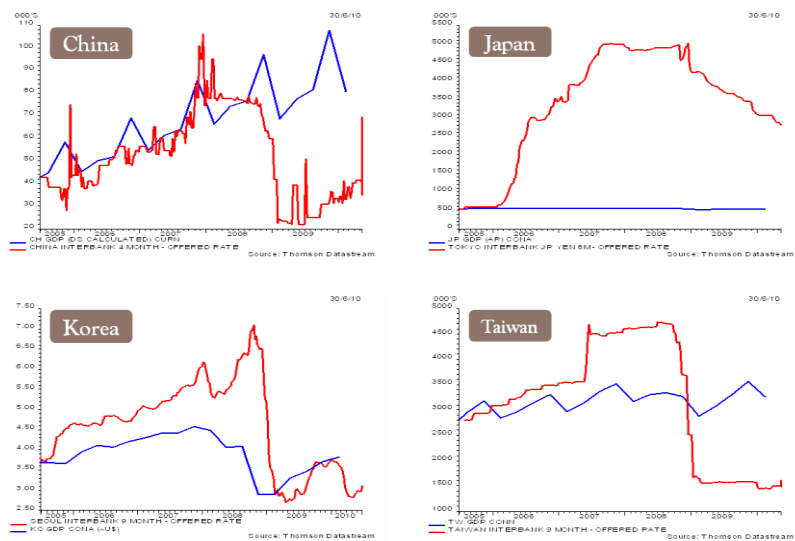


Figure 8: GDP of China, Japan, Korea and China

comparison graphs of national GDP and interbank rate during the last five years of the four Asian countries then we focus on. The blue line stands for national GDP and the red line stands for national interbank rate. For China, the interbank rate goes up from 2005 to mid 2007, and then goes down afterwards. As For the GDP, though with some seasonal fluctuations, it goes up through the same trend. By comparing the shape of the two lines, we found little relationship between them. The interbank rate fluctuates a lot, but the GDP just seems irrelevant to the changes of interest rate. This situation also happened in Japan and Taiwan. Korea seems to be the only country where the GDP rose after the interest rate decreased. Does this circumstance stands that the interest rate policies implemented in China, Japan and Taiwan are ineffective? And how could this happen?

Recalling what we've learned from class, this situation may happen when an economy falls into a liquidity trap. The liquidity trap is a concept of Keynesian

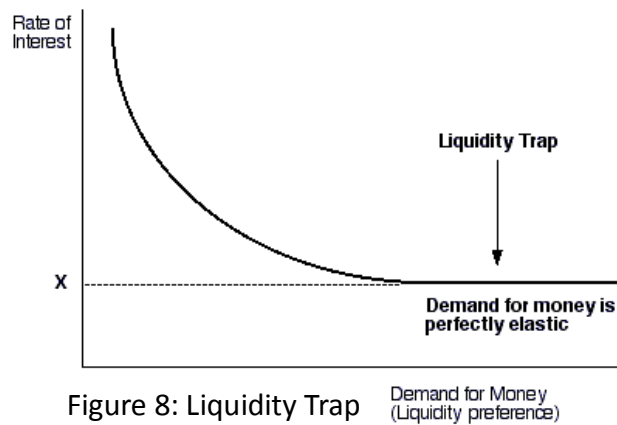


Figure 8: Liquidity Trap

Demand for Money (Liquidity preference)

economics. It happens when the level of interest rate has reach to its lowest and people expect it to rise in the future. So, if government try to further lower the interest rate by injecting money into the economy, those money will actually be saved by people, and will fail to further lower the interest rates. So, it will fail to stimulate the investment, and therefore fail to stimulate the economy, and the GDP won't rise. Could this be the current situation for Asia?

To find out the answer for the question, we reviewed the data of the interbank rates for the four countries. The interest rates of Taiwan and Japan are abnormally low comparing to other countries. On the contrary, the interest rate in Korea is much higher. After reviewing the data integrally, we can conclude that the liquidity trap occurs in Japan and Taiwan, and does not occur in Korea. In other words, the policy of lowering the interest rate is not effective in Japan and Taiwan in the short-run. As for China, it's a different story. Though its GDP seems irrelevant to interest rate, it's not the same situation as the liquidity trap. It's because that China is a developing

country, and the interest rate has relatively smaller influence to the growth of GDP comparing to other factors such as consumption, investment and net export in a developing country. Therefore, China does not have much to do with liquidity trap. But is there any other policy that could be more effective in the short-run for those countries with liquidity trap?

Exchange Rate

After we found out that decreasing interest rate seems less effective, we began to find other ways for governments to do. We began from some relation between GDP, import and export.

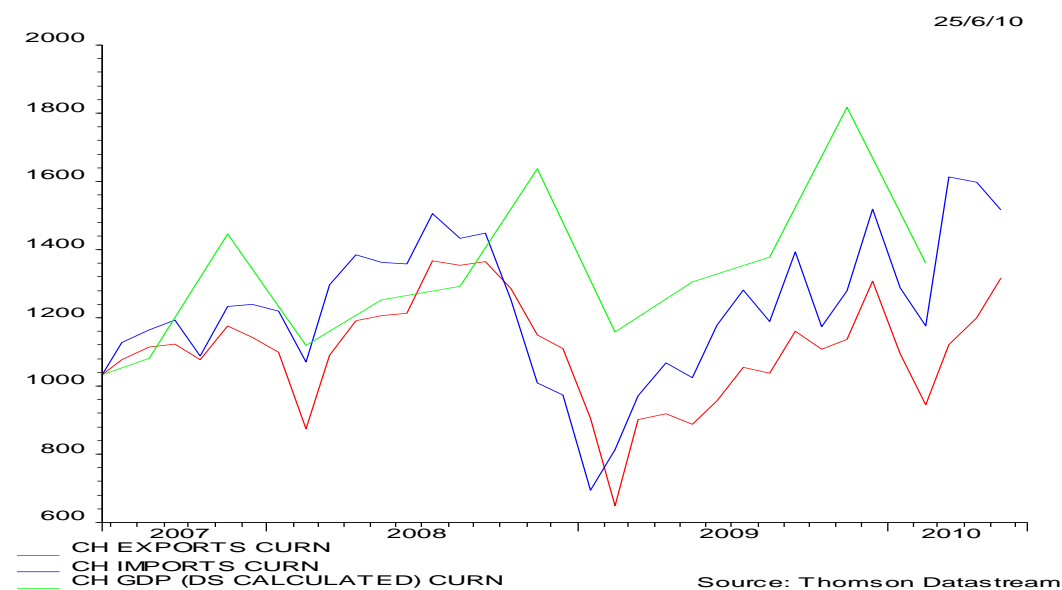


Figure 9: GDP, import and export

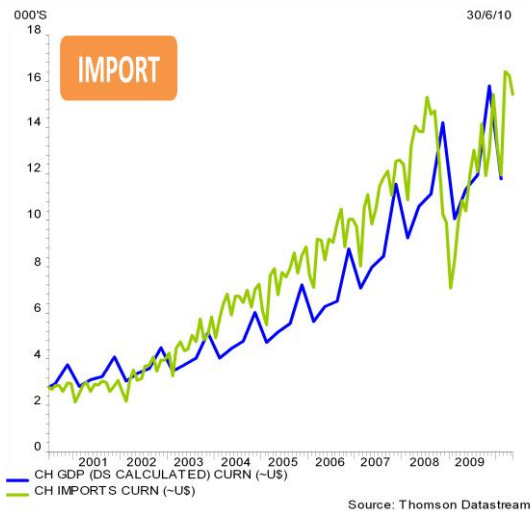


Figure 10: GDP and import

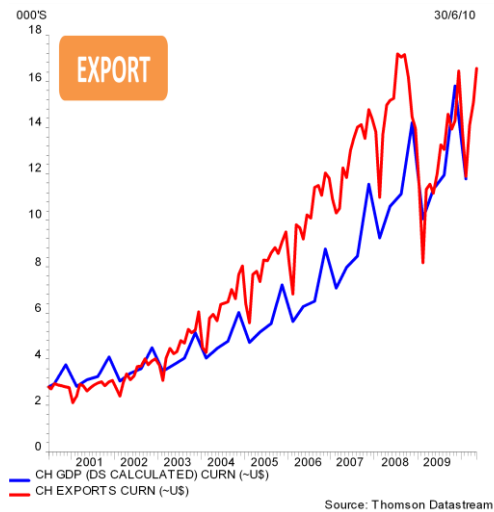


Figure 11: GDP and export

We can clearly see that GDP, import and export go up and down in the same direction. We did a simple regression test and found out they are significantly relative.

ANOVA

	dF	SS	MS	F	P-value
Regression	1	43881104825.578	43881104825.578	44.924	0.001119
Error	6	5860767584.106	976794597.351		
Total	7	49741872409.684			

Table 2: ANOVE of exchange rate

What is our next step? We all know that exchange rate depreciation is good for export. Let's see the example in Korea. Assume that only Korea won

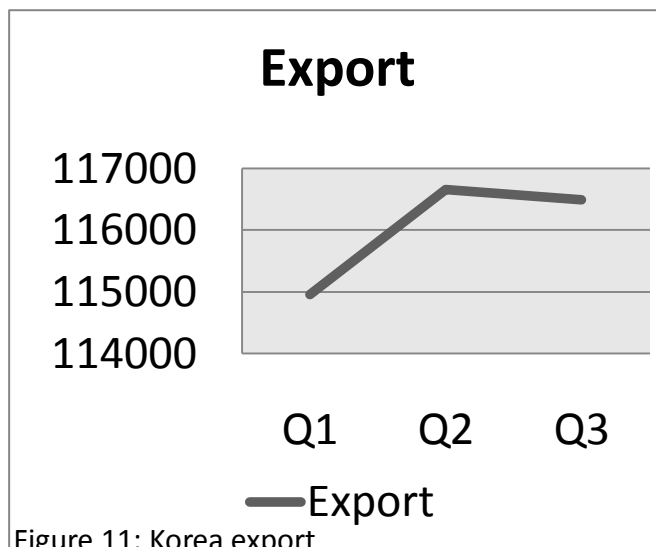


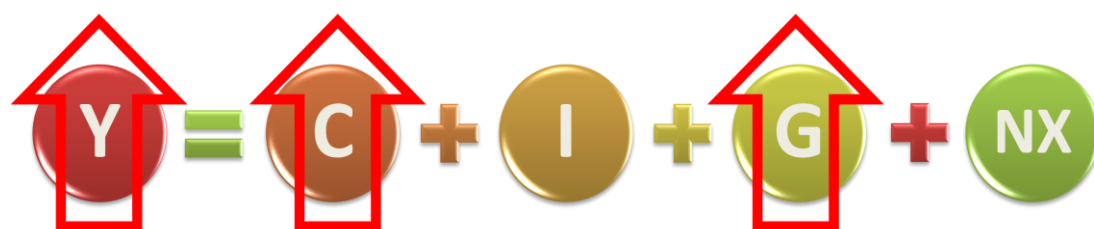
Figure 11: Korea export

depreciate. Under Marshall-Lerner condition, if income effect > price effect, depreciation of domestic currency is effective. From the graph below, we clearly see that after Korea won depreciate, their export grows a lot.

However, this method only happen when other countries' exchange rate remain unchange or even higher. This method only have short term effect.

Consumption Coupon

In order to stimulate the domestic consumption and enhance economic growth, both Japan and Taiwan governments implement the consumption subsidies. The difference is that Taiwan use consumption coupons as subsidy, while Japan use cash. Giving the consumption subsidy will increase the government expenses. The consumption part will also rise since people will use the subsidy to buy goods. As a result, the GDP will rise.



According to the Taiwan government's information, the policy of giving the consumption coupons is effective. You can see that after the giving of consumption coupons, the performances of total trade, wholesale, and retail had improved. This means that the consumption coupons did stimulate the domestic consumption. But

as you can see, the GDP decreased.

Unit : %

Year/Month	GDP	Total trade (NT)	Industrial production	Wholesale sale	Retail Sale	
					Annual growth rate	Consumption coupon/sale
2008/July	-1.05	1.8	1.9	6.5	-4.0	--
Aug.	(Q3)	19.9	0.7	5.8	-2.3	--
Sep.		-0.2	-1.2	4.3	-4.4	--
Oct.		-8.16	-9.4	-12.5	-2.2	-3.3
Nov.	(Q4)	-17.2	-28.3	-12.8	-6.8	--
Dec.		-41.5	-32.0	-18.7	-9.8	--
2009/Jan.-Feb.	-10.13	-39.0	-35.9	-18.1	-4.6	5.8
Mar.	(Q1)	-35.7	-25.8	-15.2	-3.0	8.8
Apr.	(Q2)	-30.6	-20.0	-11.9	-3.2	0.8
May		-29.4	-18.4	-15.7	-2.4	0.5
June		-26.7	-11.3	-5.8	-0.8	0.4
July	(Q3)	-23.5	-7.9	-3.9	1.3	0.3
Aug.		-23.8	-9.5	-4.2	4.4	0.3
Sep.		-14.1	1.0	-2.1	3.9	0.7

Source: Ministry of Finance, Ministry of Economic Affairs, Directorate-General of Budget, Accounting and Statistics, Executive Yuan

Table 3: Taiwan GDP, Sales

Analysis the effect of consumption subsidies by using the model will enable us to tell the result of Taiwan's policy.

The vertical axis stands for currency, and the horizontal axis stands for goods. When the government gives the consumption coupons to people, some goods will become cheaper. Therefore, the budget line CD moves outwardly to CF, and the equilibrium point is A.

If the government gives people cash instead of consumption coupons, the budget line will shift from CD to GE. Budget line GE will definitely pass through point A, since we can use the cash, as well as the consumption coupons, to buy goods. In this budget line, we can find the curve with higher utility; because people can save

the money instead of spend it. Here, the equilibrium point is B.

Therefore, to people, the utility of receiving cash is higher. But for the government, giving consumption coupons can increase more goods' consumption, so the government would prefer to stimulate the economy by giving the consumption coupons.

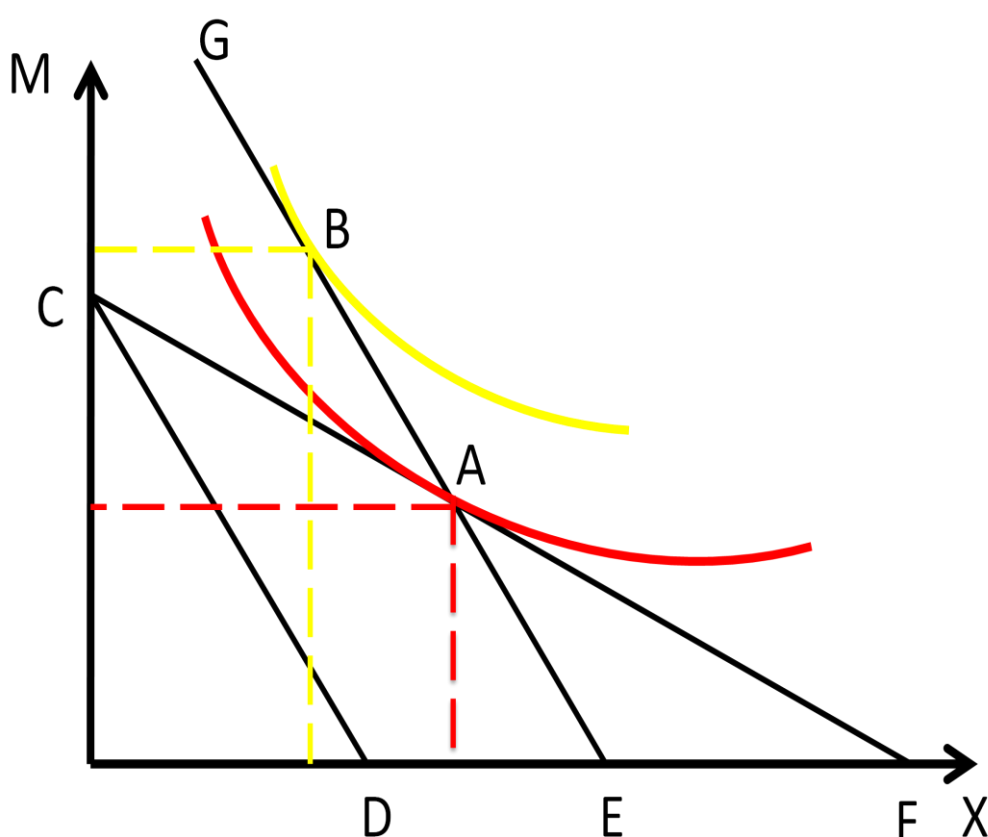


Figure 12: Consumption coupon analysis

Despite of that people cannot deposit the consumption coupons, Taiwan's consumption coupons are very like cash since there are only a few limitations on the usages. Hence, this policy did not meet its original intention. The government should set more regulations to make the consumption coupons as "quantity subsidy", but

not as “income subsidy”.

However, giving consumption coupons is only a short-term emergency measure.

Though it may stimulate the consumption, it’s just a short-term affect. Moreover, this policy will greatly increase the domestic debt. It will leave the debt problems to the next generation.

IV. Conclusion

We suggest governments should find other ways to deal with financial crisis.

Lowong interest rate is no more effective, governments may change their policies to depreciate exchange rate. And Consumption coupon could have more effective way to give people. Governments should consider more carefully on it.

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