The Economic Impact of the RMB Revaluation

Xiaohe Zhang
School of Economics, Politics and Tourism
Faculty of Business and Law
The University of Newcastle.
Callaghan, NSW 2308, Australia
Telephone: 612-49215034
Fax: 612-49216919
Email: James.Zhang.@newcastle.edu.au

Introduction

- Since the economic reform started in 1979, the Chinese Renminbi (RMB) had been devaluated for many times until 1994 when the two-tier foreign exchange system was abolished.
- After years of speculation and hearsay, China finally revalued the RMB by 2.1% in July 2005. While the currency remains effectively pegged to a basket of hard currencies, it is allowed to fluctuate against the USD by less than 0.3 per day in either direction.

Introduction

- Some American politicians believe that the undervalued RMB is responsible for much of the U.S trade deficit, while other commentators, such as Tung and Baker (2004), and Frankel (2005) argue that further revaluation of the RMB serves China's own interest so a considerable revaluation is deadly needed.
- The Chinese authorities insist that China's banking system and financial institutions must be improved before floating the RMB is considered.

The University of Newcastle

3

Introduction

- Ironically, the Chinese official position is shared by some western scholars, including Robert Mundell and Joseph Stiglitz, two Nobel laureates in economics.
- Mundell (2006) maintains that "a big change of its exchange rate will cut down China's growth rate from 9% now to perhaps half of 9%,"
- Joseph Stiglitz (2005) argues that revaluation will have little effect on the trade balance for the US and the global economy.

The University of Newcastle

4

Objectives

- To test the Mundell-Stiglitz Hypothesis that the economic impact of RMB revaluation on China and its major trade partners is virtually negative
- To seek alternative measures such as an additional expansionary fiscal policy that is undertaken simultaneously along with the RMB revaluation to remove some of the negative impacts on production and international trade

Reforms in the RMB Regime

- RMB, the Chinese currency, had been a non-convertible currency for more than 50 years until quite recently.
- When China assumed its seat on the Executive Board of the International Monetary Fund in 1980, the official rate were about 1.29 *yuan* per USD.
- Committed to improving the trade balance, the authorities intervened in the swap market and repeatedly devalued the official rate from 3.45 *yuan* per USD in 1986 to about 5.76 *yuan* per USD in 1993, and eventually unified the official and swap market exchange rates at the prevailing swap rate in 1994 at 8.62 *yuan* per USD.
- The rate revalued thereafter to 8.27 *yuan* per USD by 1998, and had stabilized at this level until July 2005 for eight years.

The Change of the RMB Rate

Year	(1) Nominal Exchange rate	(2) Consumer Price Index (1994=100)	(3) RMB deflator (1)/(2)	(4) % change of (3)	(5) US Consumer Price index (1994=100)	(6) % change of (5)
	100 US Dollar		100 US Dollar			
1993	576.20					
1994	861.87	100.00	861.87		100.00	
1995	835.10	94.36	788.00	-8.57	102.83	2.83
1996	831.42	87.27	725.57	-7.24	105.87	3.04
1997	828.98	82.84	686.70	-4.51	108.30	2.43
1998	827.91	79.94	661.79	-2.89	109.99	1.69
1999	827.83	79.13	655.06	-0.78	112.42	2.43
2000	827.84	80.90	669.74	1.70	116.19	3.78
2001	827.70	81.14	671.63	0.22	119.50	3.31
2002	827.70	79.94	661.63	-1.16	121.39	1.89

The Arguments for and Against the RMB Revaluation

- China’s foreign exchange reserves have swollen to $800 Billion, and its annual trade surplus exceeds $100 Billion.
- Since it has been well perceived that the RMB is undervalued in a range of between 15 to 25% , the optimal currency adjustment is a one-time maxi revaluation of roughly 15% versus the USD to a new fixed rate

- The foreign reserves are largely a result of the “hot money”, inflows of foreign capital hoping to instantaneously capitalize on a RMB revaluation
- China’s trade surplus is increasingly a story of slowing imports, rather than growing exports.
- China’s trade surplus with the US exceeded $200 Billion in 2005, but China runs a deficit with most other countries it trades with.

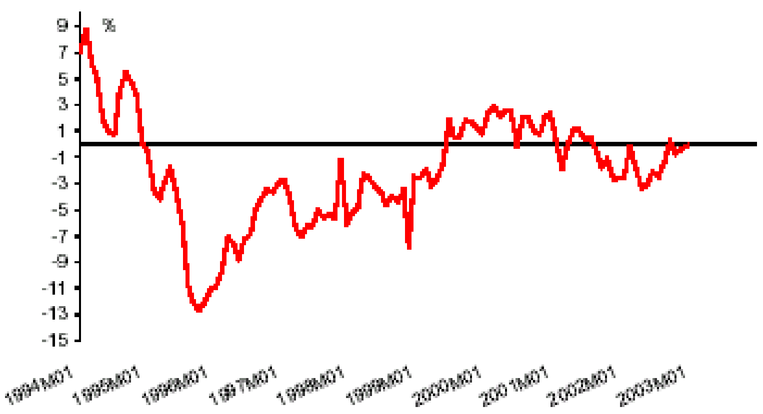
The adverse impact of RMB revaluation (Mundell-Stiglitz Hypothesis)

- Cut down China's growth rate from 9% to less than 5%
- Decrease in corporate' profitability,
- Deflation in the agricultural sector
- Increase in unemployment
- Lose of foreign direct investment (capital flight and lose in foreign exchange reserves)
- Have little effect on the problem of global trade imbalances, and particularly on the US trade deficit

9

Deflation in China

12-month change in CPI since 1994



10

The Model

- The multi-country econometric model (MCU) of Ray Fair (2004) is chosen. There are 39 countries in the MCU model in which up to 15 stochastic equations are estimated for each country.
- In the MCU model, any changes on the exogenous variable will make a difference between the projected value and its base value for each variable and for each country.
- One thus could compare the two datasets and generate some implications from the results to estimated the "net effect" of the proposed policy.

11

The Effect of A Revaluation

- When a country revalues its currency, the export price level in terms of foreign currency will rise and the price of its imports in terms of domestic currency will drop in international market.
- The revaluation is thus contractive and deflationary: the level of exports falls, the level of imports rises, and the domestic price level decreases.
- This in turn, through the trade and price links of the model, affects production and international trade of all countries in the rest of the world.

12

The Effect of A Revaluation

Explanatory Variables	Output	Interest Rates	Net Assets	Domestic Price	Import Price	Current Account	World Price
Consumption	+	-	+				
Investment	+	-					
Imports	+	-	+	+	-		
Domestic Price Level	+				+		
Interest Rate	+			+		-	
Exchange Rate		-		+		-	
Export Price				+			+
	Export Price	Exchange Rate	Export prices Other countries				
Import Price		+	+				
Exports	-	+	+				

The Experiments

- *Scenario 1:* The EMB rate is revalued by 20% in 2005 and the rate then is maintained at 6.62 *yuan* per USD for the rest of the years between 2005 and 2008.
- *Scenario 2:* Along with the 20% revaluation, there is an additional expansionary fiscal policy of increasing the government purchases by 25%.

The Results of Scenario 1:

Percent Changes as Compared to the Database

	GDP	Price Index	Exports	Imports	Current account balance*
China					
2005	-11.78	-8.14	-21.43	-5.88	113
2006	-12.88	-14.92	-20.76	-10.54	181
2007	-12.43	-19.71	-19.91	-12.90	227
2008	-11.57	-22.86	-19.03	-13.60	250
USA					
2005	0.04	0.37	0.59	-1.05	3.54
2006	-0.19	0.80	0.15	-1.84	2.32
2007	-0.39	1.09	-0.20	-2.58	1.25
2008	-20.95	1.27	-0.49	-3.07	1.77

15

The Results of Scenario 1

Percent Changes as Compared with the Database

	GDP	Price Index	Exports	Imports	Current account balance*
Japan					
2005	0.33	0.20	1.77	-0.63	-35.71
2006	0.23	0.47	0.29	-1.41	-478.61
2007	0.07	0.65	-0.81	-1.94	238.47
2008	-0.06	0.76	-1.50	-2.30	152.92
Australia					
2005	0.45	0.19	0.84	-0.63	3.43
2006	0.51	0.75	0.04	-0.89	6.50
2007	0.34	1.33	-0.40	-0.84	9.52
2008	0.18	1.82	-0.61	-0.82	8.06

16

Implications

- For China, there are significant drops in GDP, the price level, exports and imports.
- The double digit decline in both GDP and price level should have forced China into a deep recession, if not an economic crisis.
- There are only limited gains in output for USA, Japan and Australia but both the exports and imports declined for most of the years in these countries.
- Current account balance deteriorated in all three countries.
- The results seem to support the Mundell- Stiglitz Hypothesis

17

The Results of Scenario 2

Percent Changes as Compared with the Database

Year	2005	2006	2007	2008
GDP	-7.06 (-11.78)	-8.28 (-12.88)	-8.21 (-12.43)	-7.68 (-11.57)
GDP Price index	-4.84 (-8.14)	-9.37 (-14.92)	-12.80 (19.71)	-15.13 (-22.96)
Consumption	-4.39 (-7.39)	-6.50 (-10.32)	-7.12 (-10.96)	-6.99 (-10.63)
Investment	-5.50 (-9.22)	-8.18 (12.92)	-9.00 (-13.77)	-8.86 (-13.4)
Exports	-21.41 (-21.43)	-20.71 (20.76)	-19.85 (-19.91)	-18.97 (-19.03)
Imports	-0.45 (-5.08)	-2.22 (-10.90)	-3.34 (-12.90)	-3.60 (-13.6)
Current account balance	40.10 (113.8)	61.48 (181.45)	78.66 (226.7)	83.81 (250.4)
US trade deficit	3.11 (3.54)	1.73 (2.32)	0.56 (1.25)	1.13 (1.77)
Australia trade deficit	1.30 (3.43)	3.58 (6.5)	6.95 (9.52)	5.52 (8.06)

18

Implications

- The additional expansionary fiscal policy along with a considerable once-off revaluation indeed removes some of the adverse impact.
- As a result, China should still be able to achieve some positive economic growth and the deflationary pressure would be alleviated somewhat.
- Interestingly, the trade deficit in both the USA and Australia would have be reduced as compared with the scenario of a sole revaluation.

Conclusion

- The results of experiments conducted seem to support the Mundell- Stiglitz contention that a significant revaluation of the RMB brings adverse economic impact not only to the Chinese economy but also to the rest of the world. .
- According to the results of the simulations, the revaluation of RMB would not be appealing to the Chinese. To some extent it would further reinforce the deflation, reduce the competitiveness of China’s exports and the growth of GDP.
- As a result, some additional policies, such as an expansionary fiscal policy may need to be undertaken simultaneously to remove the adverse impact of the RMB revaluation, should the revaluation be inevitable in the near future.

Limitations & Impilcations

- Though with robust results, the conclusion generated from the experiments must be accepted with caution.
- The data, variables and equations are relatively limited for the non-US countries, particularly for China in the MCU model
- Although there are certain limitations in this research, it has rejected a considerable maxi revaluation because it would do more harm than good to the Chinese economy as well as the rest of the world
- This does not, nevertheless, exclude a feasibility of a gradual and moderate revaluation of less than 10% in a period of three years, if the Chinese authorities have determined to make the RMB a convertible currency in the future.

The University of Newcastle

21