

# Should Hong Kong peg its currency to RMB instead of USD in the future?

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## Introduction

The Linked Exchange Rate System was established in 1983. The objective of LERS is to stabilize the exchange rate of Hong Kong. Under the Currency Board Arrangements, the Hong Kong Monetary Authority has to hold the exchanged fund at the fixed exchange rate of HK\$7.8 to US\$1. In recent years, people in Hong Kong advocate that we should peg HKD to RMB instead of USD because of the internationalization of RMB

There are three main aspects for us to consider whether to peg our home currency to a foreign currency:

1. The business cycles of the two economy
1. Inflation
2. Export and Import

## Methodology

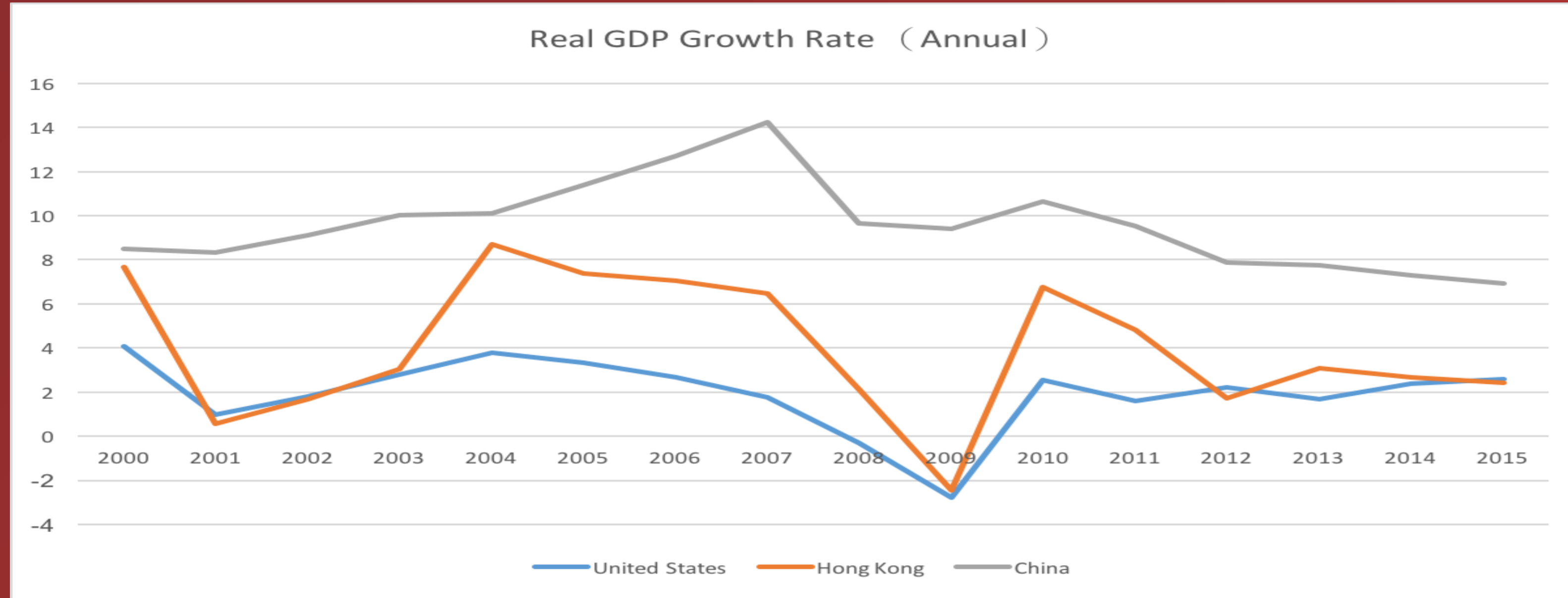
Data Sources:

- > Real GDP Growth Rate from THE WORLD BANK
- > RMB as world payments currency from SWIFT WATCH
- > CPI, Export and Import from Hong Kong Census and Statistics Department
- > GDP from National Bureau of Statistics of China
- > Exchange rate from the World's Trusted Currency Authority

Analytical Tools:

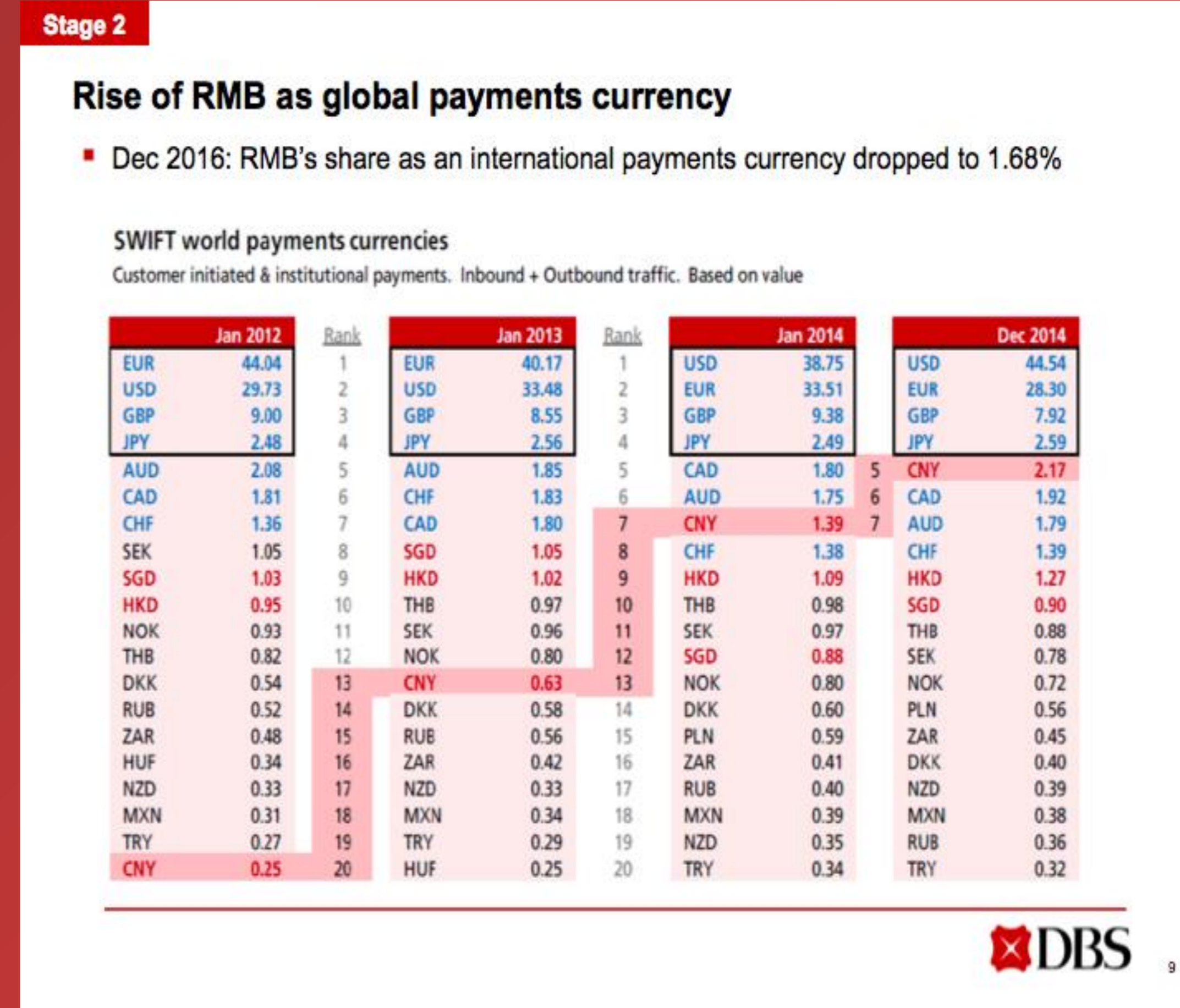
- > Correlation
- > Regression

## Business cycle and the global payment currency



In the past six years,

- The correlation between the Hong Kong economy and the China's economy is 0.929
- The correlation between the Hong Kong economy and the US economy is -0.018
- => The business cycles of the Hong Kong economy is closer to the China's economy than the US economy
- => Under fixed exchange rate system, Hong Kong can stabilize the exchange rate but lose the control of the money supply
- => From 2010 - 15, the Fed implemented the expansionary monetary policy (QE3) to stimulate its weak economy while HK needed a tight monetary policy to fight inflation (the high growth of China's economy)
- => So, Hong Kong should peg its currency to RMB as the business cycles of Hong Kong economy and China's economy is synchronise



Rise of RMB as the world payments currency in value

RMB is going internationalization

Stage of RMB internationalization: Promote RMB through trade

Global Central Banks have confidence in using RMB as trading currency

RMB is supportive and potential

It could reduce the exchange rate volatility of Hong Kong

## Inflation

Annual rates of change in the CPI		
	Year	Percentage change of CPI
NO QE	2006	2.00%
NO QE	2007	2.00%
QE1	2008	4.30%
NO QE	2009	0.50%
NO QE	2010	2.40%
QE2	2011	5.30%
QE3	2012	4.10%
	2013	4.30%
	2014	4.40%
NO QE	2015	3.00%
NO QE	2016	2.40%

QE = Quantitative Easing  
(An economic policy to increase the money supply, implemented by the central bank of USA)

CPI: a measure to examine the weighted average price level of goods and services.

- The percentage change of CPI can generally show the degree of the inflation rate.

- When quantitative easing policies were implemented by Fed, the central bank of USA, the percentage change of CPI are all bigger than 4%

- When Fed did not implement quantitative easing, the percentage change of Hong Kong's CPI are all smaller than 3%

Year	Exchange rate HKD/RMB	Percentage change of exchange rate	Policy 1 (Individual visit program)	Policy 2 (multiple-entry permits)	CPI	The spending of mainland visitors (billion HKD)	Percentage change of spending
2000	1.0623	0.060436369	0	0	-0.038	14.5	2.674148649
2001	1.0613	0.059494572	0	0	-0.016	17.4	2.856470206
2002	1.0612	0.059400343	0	0	-0.03	28.1	3.335769576
2003	1.0631	0.061189168	1	0	-0.026	33.4	3.5085559
2004	1.0626	0.060718735	1	0	-0.004	38.6	3.653252276
2005	1.0523	0.050978245	1	0	0.01	42.2	3.742420221
2006	1.0244	0.024107075	1	0	0.02	47.6	3.862832761
2007	0.9721	-0.028296599	1	0	0.02	58.9	4.075841091
2008	0.8899	-0.116646182	1	0	0.043	69.2	4.237000863
2009	0.8811	-0.126584152	1	1	0.005	83.5	4.424846632
2010	0.8701	-0.139147131	1	1	0.024	112.9	4.726502471
2011	0.8289	-0.187655758	1	1	0.053	147.2	4.991792206
2012	0.8125	-0.207639365	1	1	0.041	178.7	5.185708422
2013	0.7918	-0.233446444	1	1	0.043	217.1	5.380358077
2014	0.7957	-0.228533049	1	1	0.044	242.1	5.489350864
2015	0.8114	-0.208994128	1	1	0.03	217.7	5.383117968

$$S = -4.43E + 0.55P1 + 0.29P2 + 2.95C + 3.303$$

- The R-square is 0.957, which means that 95.7% dependent variables can be explained by the linear regression, so the regression relationship is strong

- The p-values show the significance of the exchange rate and policy 1, and insignificance of policy 2 and CPI, therefore the spending of mainland visitors is surely affected by the exchange rate

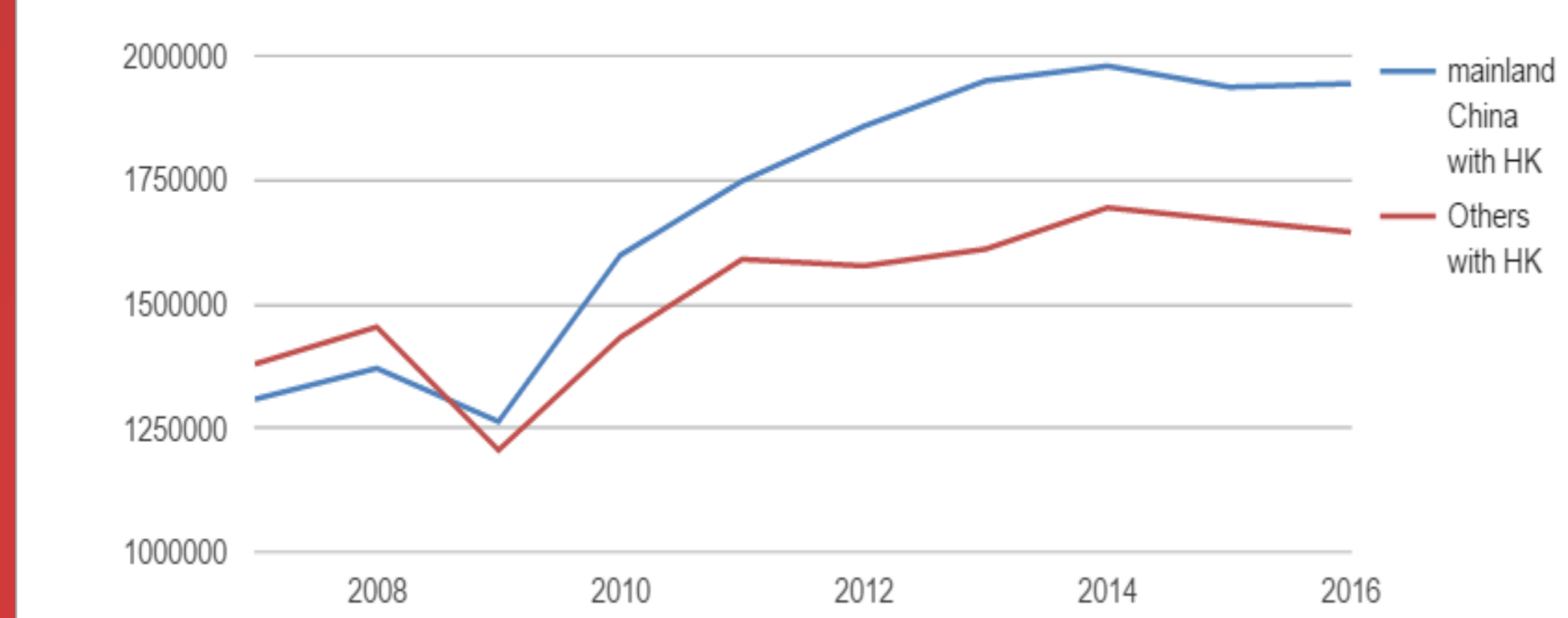
R-square: 0.957

Coefficients		Estimate	Std. Error	t value	p-value
(Intercept)		3.303	0.156	21.193	<0.0001
Percentage change of exchange rate		-4.431	1.931	-2.295	0.0424
Policy 1 (Individual visit program)		0.551	0.21	2.631	0.0234
Policy 2 (multiple-entry permits)		0.285	0.317	0.897	0.3887
CPI		2.947	5.357	0.55	0.5933

## Export and Import

Hong Kong total export in a decade					
Year	mainland China with HK	Others with HK	Difference	Exchange Rate	The rate of trade with mainland
2007	1308332	1379181	-70849	0.9746	0.4868188545
2008	1370145	1453706	-83261	0.8919	0.4852591097
2009	1263249	1205810	57409	0.8512	0.5116255429
2010	1598222	1432797	165425	0.8713	0.5272867775
2011	1747355	1589898	157457	0.8297	0.5235908096
2012	1857759	1576587	281172	0.8137	0.5409353047
2013	1949247	1610439	338808	0.7988	0.5475889508
2014	1979016	1693735	285281	0.7925	0.538837509
2015	1936515	1668764	267751	0.8033	0.5371331872
2016	1943469	1644778	298691	0.855	0.5416207413

Correlation: -0.847742981



In the past 10 years

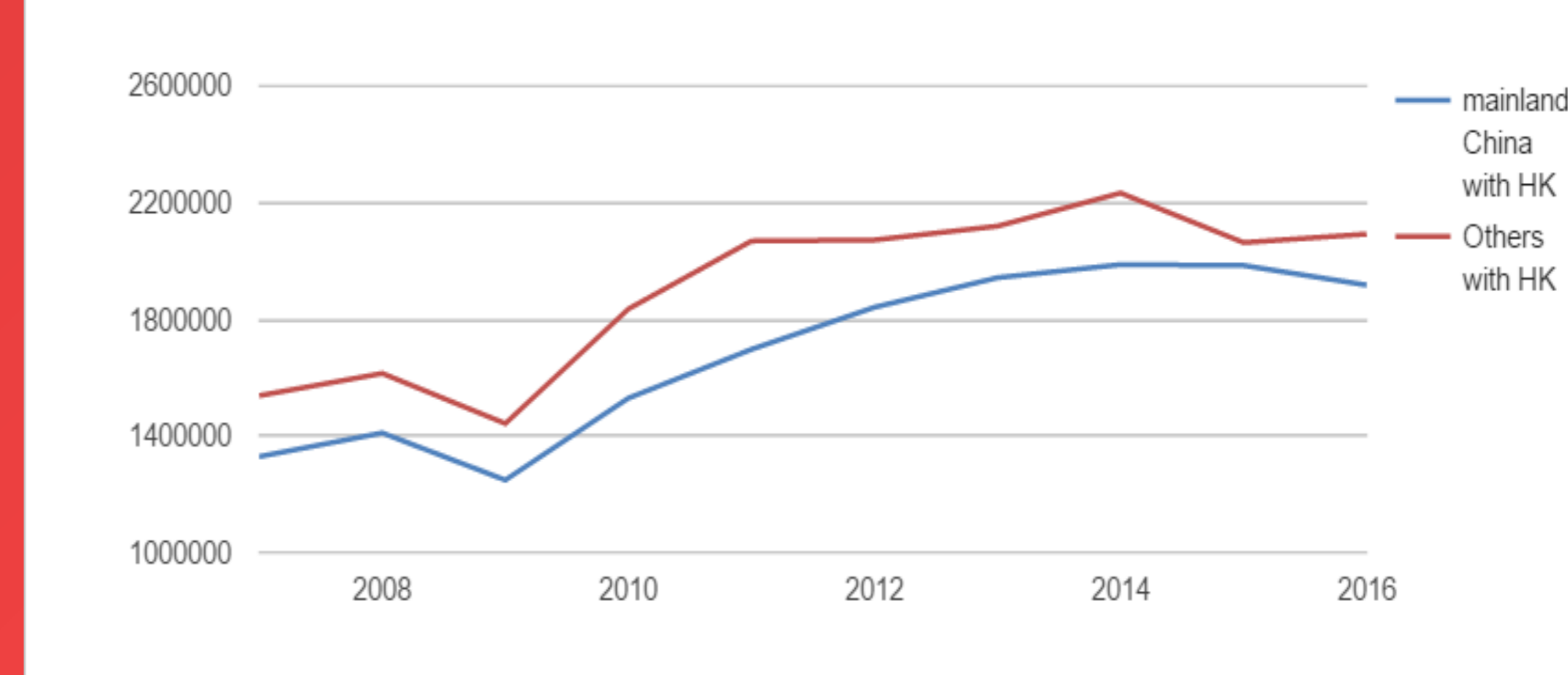
- 54% of Hong Kong export is to Mainland.

- The correlation between Hong Kong export to Mainland and exchange rate between HKD and RMB is -0.848.

- Hong Kong's export is negatively related to exchange rate between HKD and RMB according to the correlation analysis. And it is also a very significant part of Hong Kong's GDP.

Hong Kong total import in a decade					
Year	mainland China with HK	Others with HK	Difference	Exchange Rate	
2007	1329652	1838359	-208707	0.9746	0.4636146793
2008	1410735	1614553	-203818	0.8919	0.4663142815
2009	1249374	1442982	-193608	0.8812	0.4640448737
2010	1829751	1835089	-30538	0.8713	0.4546281547
2011	1696807	2067789	-370982	0.8297	0.450727515
2012	1840862	2071301	-230439	0.8137	0.4705453997
2013	1942131	2118596	-176455	0.7988	0.4732729257
2014	1896964	2232082	-245118	0.7925	0.4709510159
2015	1944048	2062372	-78324	0.8033	0.4903218153
2016	1916831	2091553	-174722	0.855	0.4782054314

Correlation: -0.8387761047



In the past 10 years.

- 46% of Hong Kong import is from Mainland.

- The correlation between Hong Kong import from Mainland and exchange rate between HKD and RMB is -0.839.

- Hong Kong's import is negatively related to exchange rate between HKD and RMB according to the correlation analysis.

## Conclusion

- The business cycles of Hong Kong's economy is closer to the China's economy than US economy
    - Monetary policy implemented by the People's Bank of China is effective toward Hong Kong economic environment
  - The rise of RMB as global payment currency
    - RMB is going internationalization
  - The expansionary policies implemented by the Fed, the central bank of USA, increased the inflation in Hong Kong because of pegging to US dollars
  - A stable exchange rate between HKD and RMB can stabilize the trade balance of Hong Kong, which means a stable GDP growth rate and a stable inflation rate
- => Hong Kong should peg its currency to RMB instead of USD in the future