China and Its Dollar Exchange Rate
A Worldwide Stabilizing Influence?

Ronald I. McKinnon
Stanford University

Asian Development Bank
Manila

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Figure 13.1: US and China Nominal GDP History and Projection

Source: International Financial Statistics, IMF, author's projection
Trade as a Share of China’s GDP

Source: UBS
China Savings, Investment, and Trade Balance, as Percentage of GDP

Source: BIS-Ma,
# China’s Multilateral and Bilateral Trade Surplus vs. US

<table>
<thead>
<tr>
<th>Year</th>
<th>Trade Balance US$</th>
<th>Trade Balance percent of GDP</th>
<th>Bilateral Trade Balance billion US$</th>
<th>Bilateral Trade Balance percent of GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980</td>
<td>-1</td>
<td>-0.33%</td>
<td>-2.8</td>
<td>-0.93%</td>
</tr>
<tr>
<td>1982</td>
<td>4.8</td>
<td>1.63%</td>
<td>-2.5</td>
<td>-0.86%</td>
</tr>
<tr>
<td>1984</td>
<td>0.1</td>
<td>0.01%</td>
<td>-1.5</td>
<td>-0.48%</td>
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<tr>
<td>1986</td>
<td>-7.4</td>
<td>-2.43%</td>
<td>-2.1</td>
<td>-0.69%</td>
</tr>
<tr>
<td>1987</td>
<td>0.3</td>
<td>0.09%</td>
<td>-1.8</td>
<td>-0.55%</td>
</tr>
<tr>
<td>1988</td>
<td>-4.1</td>
<td>-0.98%</td>
<td>-3.2</td>
<td>-0.78%</td>
</tr>
<tr>
<td>1990</td>
<td>10.7</td>
<td>2.64%</td>
<td>-1.3</td>
<td>-0.32%</td>
</tr>
<tr>
<td>1992</td>
<td>5.1</td>
<td>1.00%</td>
<td>-0.3</td>
<td>-0.06%</td>
</tr>
<tr>
<td>1994</td>
<td>7.4</td>
<td>1.26%</td>
<td>7.4</td>
<td>1.28%</td>
</tr>
<tr>
<td>1996</td>
<td>17.6</td>
<td>1.97%</td>
<td>10.5</td>
<td>1.18%</td>
</tr>
<tr>
<td>1998</td>
<td>43.8</td>
<td>4.19%</td>
<td>21.0</td>
<td>2.01%</td>
</tr>
<tr>
<td>2000</td>
<td>28.8</td>
<td>2.42%</td>
<td>29.8</td>
<td>2.50%</td>
</tr>
<tr>
<td>2002</td>
<td>37.4</td>
<td>2.57%</td>
<td>42.8</td>
<td>2.94%</td>
</tr>
<tr>
<td>2004</td>
<td>49.3</td>
<td>2.54%</td>
<td>80.4</td>
<td>4.14%</td>
</tr>
<tr>
<td>2006</td>
<td>208.9</td>
<td>7.49%</td>
<td>144.6</td>
<td>5.19%</td>
</tr>
<tr>
<td>2008</td>
<td>348.7</td>
<td>7.69%</td>
<td>171.1</td>
<td>3.77%</td>
</tr>
<tr>
<td>2009</td>
<td>220.1</td>
<td>4.36%</td>
<td>143.6</td>
<td>2.84%</td>
</tr>
<tr>
<td>2010</td>
<td>183.1</td>
<td>3.11%</td>
<td>181.2</td>
<td>3.08%</td>
</tr>
<tr>
<td>2011</td>
<td>155.1</td>
<td>2.07%</td>
<td>202.3</td>
<td>2.70%</td>
</tr>
</tbody>
</table>
Figure 6: Bilateral Trade Balances of Japan and China versus the United States (percentage of U.S. GDP, 1955-2011)
Source: Financial Times, November 11, 2010
Big Mac prices vs GDP per person, July 2011

Big Mac index, local currency under(-)/over(+) valuation against the dollar, %

- Raw index
- Adjusted for GDP per person

<table>
<thead>
<tr>
<th>Country</th>
<th>Raw Index</th>
<th>Adjusted for GDP per person</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazil</td>
<td>6.16</td>
<td>150</td>
</tr>
<tr>
<td>Argentina</td>
<td>4.84</td>
<td>60</td>
</tr>
<tr>
<td>Sweden</td>
<td>7.64</td>
<td>30</td>
</tr>
<tr>
<td>Switzerland</td>
<td>8.06</td>
<td>90</td>
</tr>
<tr>
<td>Euro area</td>
<td>4.93†</td>
<td>60</td>
</tr>
<tr>
<td>Canada</td>
<td>5.00</td>
<td>30</td>
</tr>
<tr>
<td>South Korea</td>
<td>3.50</td>
<td>0</td>
</tr>
<tr>
<td>Mexico</td>
<td>2.74</td>
<td>-30</td>
</tr>
<tr>
<td>Australia</td>
<td>4.94†</td>
<td>30</td>
</tr>
<tr>
<td>Russia</td>
<td>2.70</td>
<td>-60</td>
</tr>
<tr>
<td>Britain</td>
<td>3.89</td>
<td>-90</td>
</tr>
<tr>
<td>Japan</td>
<td>4.08</td>
<td>-120</td>
</tr>
<tr>
<td>China</td>
<td>2.27</td>
<td>-150</td>
</tr>
<tr>
<td>United States</td>
<td>4.07†</td>
<td>60</td>
</tr>
<tr>
<td>India</td>
<td>1.89</td>
<td>-180</td>
</tr>
</tbody>
</table>

Sources: McDonald’s; IMF; The Economist
Thesis

• For a creditor country with a current account surplus such as China, exchange appreciation need not reduce it.

• As with Japan’s earlier experience, exchange rate appreciation, or the threat thereof, caused macroeconomic distress without having any obvious effect on its trade surplus.

• If the country is an *immature creditor* and its trade surplus is large, even floating is infeasible. Because of currency mismatches, the private sector cannot risk financing the surplus.
U.S. Mercantile Pressure on China

• China Bashing: 2000 to ?
  - China surpasses Japan in 2000 as having the biggest bilateral trade surplus with the U.S
  - Unlike Japan, export surge is “across the board” in low value added manufactures.

Focus is primarily on appreciating the Renminbi:
  - Schumer-Graham bill of March 2005 for a 27.5% tariff on U.S. imports from China unless RMB appreciates (withdrawn October 2006, but new threat in 2007)
  - Section 3004 of U.S. Public Law 100-418: U.S. Secretary of Treasury must report twice a year on whether countries with trade surpluses are “manipulating” their currencies.

• RMB rises by 2.1% on July 21 2005, and begins slow upward crawl to 2008
• Sept, 2010, House of Rep, in bipartisan vote, authorizes Commerce Dept to impose tariffs on imports from China to offset “unfair” exchange rate and other trade practices.
• Oct. 2012: Pre-election China bashing by both Democrats and Republicans
Figure 1: China’s monetary policy and the yuan/dollar rate (1994-2012)

Fixed Exchange Rate Anchor: Monetary Stability

“One Accidental stabilization”: Regain monetary control

Appreciation; Loss of monetary control again

One way bet on RMB appreciation: Loss of monetary control; inflation

Note: before 1994 China’s currency was inconvertible with multiple exchange rates

Source: Federal Reserve Economic Data
Real GDP Growth and Consumer Price Inflation, China, 1980-2010

Source: IMF.
The Yuan/Dollar Rate: A Potted History

- 1995 to 2004 rate fixed at 8.28 Y/$ to stop inflation and anchor price level
- July 2005 to July 2008, one-way bet on gradual RMB appreciation: hot money inflows, buildup of official exchange reserves, loss of monetary control, disruption of forward exchange market.
- Y/$ rate reset at 6.83 July 2008 through June 2010. Monetary control regained with a massive expansion of bank credit offsetting sharp export fall.
- June 2010, RMB officially unpegged from dollar but the rate moves very little—about 3 percent as of Jan 2011
- RMB little changed at 6.3 yuan per dollar for 2012
China’s Savings by source

Source: CEIC, GS Global ECS Research.
Share of Investment and Consumption of China’s GDP

Source: UBS
Figure 16: Investment, Savings and Current Account of China
(as a percent of GDP)

Source: EIU
Exchange Rate and the Trade Balance

\[ X - M = S - I = \text{Trade (Saving) Surplus} \]

\( X \) is exports and \( M \) is imports broadly defined, \( S \) and \( I \) are gross domestic saving and investment

Two theoretical Approaches:

(1) Microeconomic focus on \( X - M \): the elasticities approach to the trade balance; and

(2) Macroeconomic focus on \( S - I \): the absorption approach to the trade balance.
Effect of Appreciating the Renmimbi?

• *Elasticities Approach:*
  \[ X \downarrow \quad M \uparrow \quad \text{and trade surplus declines} \]

• *Absorption Approach:*
  \[ S \uparrow \downarrow \quad I \downarrow \quad \text{and trade surplus ?} \]
  But if \( I \) is sensitive to the exchange rate and slumps, trade surplus increases. Investment in China’s open economy, with multinational firms, is huge: more than 40% of GDP.

• Japan’s experience with ever-higher yen, 1971 – 95: Investment eventually slumped with general deflation, followed by “lost” decades, but the trade surplus remained.
Expected Appreciation of RMB

• “Hot” money flows into China
  - sharper build up of official exchange reserves
  - threatened loss of monetary control as base money expands from foreign exchange intervention
    - sterilization disrupts normal flow of bank credit
  - domestic interest rates bid down with possible bubbles in asset markets such as real estate.

• No natural capital outflow to finance China’s huge trade (net saving) surplus
Composition of China’s Foreign Exchange Reserve

USD bn

Source: Standard Chartered Research
Figure 5: Historical Lending Activities of Chinese Commercial Banks

Monthly new lending (RMB bn, sa, 3mma)

- Nominal new loans
- Adjusted for bill financing
- New loans / GDP (RHS)

Source: UBS
China’s Bank Credit

Source: CEIC, World Bank staff estimates.
1/ Includes FX loans and trust loans, designated loans, corporate paper and medium term notes.
US Bank Lending
(last obs. June 2011, estimate for July 2011)

Bank lending has been recovering, but is only now reaching breakeven on a year-over-year basis.

Source: Federal Reserve; Encima Global
China’s bank lending grew sharply after the crisis. Helping avoid a sharp slowdown.

Source: Bloomberg; Encima Global
World's real GDP in recoveries (2007=100)

World
Advanced Economies
Emerging and Developing Economies
China
US

Projections
Countercyclical Bank Lending: U.S. and China Compared (D. Malpass)

- **United States**: bank credit is *pro-cyclical*
  - animal spirits with few controls in booms
  - heavy controls after busts: increased bank capital, mark-to-market accounting, closer regulatory scrutiny.

- **China**: bank credit is *counter-cyclical*
  - lending restricted during booms with rationing
  - lending encouraged (required?) in a bust

- A natural consequence of indirect regulation in U.S. against state ownership of banks in China?
Wage and Labor Productivity Growth: Unit labor Costs in China

• Discrete changes in the yuan/dollar rate will not predictably affect the trade (net saving) balance.

• But to sustain a stable Y/$ rate, balancing “international competitiveness” still requires that Chinese unit labor costs (ULCs) approach those in the United States.

• Evidence suggests that if the nominal exchange rate is stable, money wages in the high-growth country rise sufficiently fast that ULCs converge.

• Conversely, with actual or expected appreciation, money wage growth slows with no tendency to converge to a stable equilibrium, e.g. Japan 1970-80s
# Chinese Wage Growth

<table>
<thead>
<tr>
<th>Average wage yoy % chg</th>
<th>Industrial sector</th>
<th>Manufacturing sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>5.8</td>
<td>10.9</td>
</tr>
<tr>
<td>2002</td>
<td>5.8</td>
<td>13.4</td>
</tr>
<tr>
<td>2003</td>
<td>4.2</td>
<td>12.6</td>
</tr>
<tr>
<td>2004</td>
<td>3.6</td>
<td>11.2</td>
</tr>
<tr>
<td>2005</td>
<td>8.7</td>
<td>10.4</td>
</tr>
<tr>
<td>2006</td>
<td>13.8</td>
<td>12.6</td>
</tr>
<tr>
<td>2007</td>
<td>16.0</td>
<td>14.7</td>
</tr>
<tr>
<td>2008</td>
<td>16.6</td>
<td>12.7</td>
</tr>
<tr>
<td>2009</td>
<td>10.5</td>
<td>6.2</td>
</tr>
<tr>
<td>2010</td>
<td>14.8</td>
<td>14.9</td>
</tr>
</tbody>
</table>

*Source: CEIC, GS Global ECS Research*
Base year = 100

- China productivity
- China wage (effective in US$)
- Euroland productivity
- Euroland wage (effective in US$)

Source: CEIC, GS Global ECS Research
Earlier Evidence from Japan since 1950
Japan and the United States, 1950-1971, with the Yen Fixed at 360 per dollar (average annual percent change in key indicators)

<table>
<thead>
<tr>
<th>Wholesale prices</th>
<th>Money wages</th>
<th>Consumer prices</th>
<th>Industrial production</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S.</td>
<td>Japan</td>
<td>U.S.</td>
<td>Japan</td>
</tr>
<tr>
<td>1.63</td>
<td>0.69(^a)</td>
<td>4.52</td>
<td>10.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.53</td>
<td>5.01</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4.40</td>
<td>14.56</td>
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</table>

<table>
<thead>
<tr>
<th>Real GDP</th>
<th>Nominal GDP</th>
<th>Narrow money</th>
<th>Labor productivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S.</td>
<td>Japan</td>
<td>U.S.</td>
<td>Japan</td>
</tr>
<tr>
<td>3.84</td>
<td>9.45(^a)</td>
<td>6.79</td>
<td>14.52(^a)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.94</td>
<td>16.10(^b)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.55</td>
<td>8.92(^c)</td>
</tr>
</tbody>
</table>


\(^a\)1952-1971.
\(^b\)1953-1971.
\(^c\)1951-1971.
Manufacturing Wage Growth for U.S. and Japan 1950-71
with Exchange Rate Fixed at 360 Yen per Dollar
Figure 2: Differential in Wage Growth between Japan and U.S., and Yen/Dollar Rate, 1950-2004
Yen and Yuan against the Dollar

Source: Datastream
Yuan/Dollar and Wage Growth

• In the long run, nominal exchange appreciation and money wage growth are substitutes.

• But anticipated exchange appreciation induces hot money inflows, upsets the financial markets, and inhibits wage growth.

• For a catch-up economy with high productivity growth like China, stabilize the nominal exchange rate and allow fast wage growth.

• But additional steps to increase personal income and consumption remain necessary to reduce the trade (net saving) surplus.
The CPI–based REER and NEER of the broad BIS basket consisting of 61 trading partners’ currencies.  

1 The CPI–based REER and NEER of the broad BIS basket consisting of 61 trading partners’ currencies.  
2 The ULC–based REER basket covers 43 trading partners’ currencies, with a combined trade weight of 95% of the broad BIS basket for the renminbi. The 43 BIS trade weights are renormalized for our ULC–based REER basket.  
3 ULC of the industry sector for the euro area and of manufacturing sector for others; China’s ULC is estimated using the ratio of the total nominal manufacturing wage bills to the real GDP of the manufacturing sector. Refer to Box 1 for details of China’s ULC.

Sources: OECD; CEIC; national data; authors’ own estimates.
Real bilateral and effective exchange rates for the renminbi
2005 = 100

Against US dollar

Real rate:
- ULC-based\(^{1,2}\)
- CPI-based\(^2\)
- Bilateral nominal rate

Against euro

Bilateral Japanese yen

Against currencies of emerging market\(^3\)

Source: Ma, McCauley and Lam, 2012

1 ULC of the manufacturing sector; China’s ULC is estimated using the ratio of the total nominal wage bills to the real GDP of the manufacturing sector; refer to Box 1 for details of China’s ULC.

2 Nominal bilateral rate adjusted for the relative ULC or CPI.

3 Argentina, Brazil, Chile, Chinese Taipei, Czech Republic, Hong Kong SAR, Hungary, India, Indonesia, Israel, Korea, Malaysia, Mexico, Poland, Singapore, Thailand and Turkey. Their trade weights of broad BIS basket for the renminbi are renormalized.

Source: OECD; CEIC; national data; authors’ own estimates.
The Worldwide Inflation in 2010-11

- Near zero U.S. short-term interest rates, and QE2 to drive long-rates down, induce massive hot money outflows to emerging markets
- Officials in emerging markets from Brazil to China complain about their loss of monetary control and the welling up of inflation
- True to its past insularity, the Fed ignores these complaints and focuses on U.S. macroeconomic indicators—such as unemployment.
Figure 5.2 10 Year Government Bond Rate of Selected Countries (Nov-08 to Mar-12)
## Interest Rate Structure, China and US

<table>
<thead>
<tr>
<th>Year</th>
<th>China</th>
<th>United States</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Deposit Rate</td>
<td>Lending Rate</td>
</tr>
<tr>
<td>2001</td>
<td>2.25</td>
<td>5.58</td>
</tr>
<tr>
<td>2002</td>
<td>1.98</td>
<td>5.31</td>
</tr>
<tr>
<td>2003</td>
<td>1.98</td>
<td>5.31</td>
</tr>
<tr>
<td>2004</td>
<td>2.25</td>
<td>5.58</td>
</tr>
<tr>
<td>2005</td>
<td>2.25</td>
<td>5.58</td>
</tr>
<tr>
<td>2006</td>
<td>2.52</td>
<td>6.12</td>
</tr>
<tr>
<td>2007</td>
<td>4.14</td>
<td>7.47</td>
</tr>
<tr>
<td>2008</td>
<td>2.25</td>
<td>5.31</td>
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<tr>
<td>2009</td>
<td>2.25</td>
<td>5.31</td>
</tr>
<tr>
<td>2010</td>
<td>2.5</td>
<td>5.56</td>
</tr>
</tbody>
</table>

Source: IMF.
Source: Mehmet Yörükoğlu
Emerging Markets and China, Foreign Exchange Reserves (Billion USD)

Total Emerging Markets
China

Source: IFS

Emerging Markets (EM) include the following countries: Russia, Poland, Czech Republic, Hungary, Romania, Ukraine, Turkey, Israel, UAE, Saudi Arabia, South Africa, China, India, Hong Kong, Korea, Singapore, Indonesia, Malaysia, Thailand, Brazil, Mexico, Chile, Peru, Colombia, Argentina, Venezuela. For data missing on UAE in May to July 2012 and on China in July 2012, assuming no change in reserves in these months.
Major Foreign Reserve Holders, Oil Exporters Excluded
(2000 vs. 2011 Q3, in Billions of USD)
Emerging Markets (EM) and Developed Markets (DM) Inflations

Source: Haver Analytics, Morgan Stanley Research
Developed Markets (DM) include the following countries: United States, Germany, France, Italy, Spain, Japan, United Kingdom, Canada, Sweden, Australia
Core Inflation

(annual change)

Source: Bloomberg, CBRT

Source: Mehmet Yörükoğlu
Figure 4: The Greenspan-Bernanke Bubble Economy

Source: Bloomberg and Federal Reserve Economic Data
Food/Agriculture Product Price (2005=100)

Start of Arab Spring

Source: Bloomberg
Figure 4: World GDP*

Source: The Economist (Oct 30-Nov 5 2010)
*Estimates based on 52 countries representing 90% of world GDP. Weighted by GDP at purchasing power parity
Figure 5: Two Speed Recovery

Source: Financial Times (November 12, 2010)
China’s Inflation

Source: World Bank
Emerging Markets (EM) include the following countries: Russia, Poland, Czech Republic, Hungary, Romania, Ukraine, Turkey, Israel, UAE, Saudi Arabia, South Africa, China, India, Hong Kong, Korea, Taiwan, Singapore, Indonesia, Malaysia, Thailand, Brazil, Mexico, Chile, Peru, Colombia, Argentina, Venezuela.
Conclusion for US Monetary Policy

• In 2010 into 2011, the Fed again ignores distress on the dollar standard’s periphery by pursuing an inward-looking QE2

• But near zero interest rates are not in America’s own best interest either:
  - fall in retail bank credit
  - de-capitalization of defined-benefit pension funds
  - eventual import of inflation from abroad

• A mistake to ignore feedbacks from ROW

• In 2012, QE3 and zero interest rates marginally effective in U.S. while imposing financial repression on the rest of the world
China and Its Dollar Exchange Rate
A Worldwide Economic Stabilizer?

• China’s Economy
• The East Asian Economy
• The World Economy
Real GDP Growth and Consumer Price Inflation, China, 1980-2010

Source: IMF.
Economic Weights in East Asia (1)

Source: IMF.
Economic Weights in East Asia (2)

- China
- Japan
- East Asia 8

as percent of intra-East Asian exports

Source: IMF.
Real Growth in East Asia

Source: IMF.
Global Growth Performance

Source: IMF.
China as World Stabilizer: Conclusion as of 2011

- Since 1994, China’s stable dollar exchange rate and current account convertibility were followed by high noninflationary growth of 8 to 10%.
- In East Asia, as China surpassed Japan in trade and size by the mid 2000s, its high growth and more stable dollar rate better smoothed regional business cycles.
- In the global downturn of 2008-09, an ever larger Chinese economy with its counter-cyclical fiscal policy based on bank credit was an important stabilizer on a world scale.
- But China’s international stabilizing role could yet be unhinged by unduly low interest rates in the United States leading to inflationary inflows of hot money.
Can China Do it Again?
Countering the World Downturn of 2012

• The unending crisis of the euro with negative economic growth in Europe in 2012.
• The faltering U.S. economic recovery from the 2008-09 slump