

# China and Its Dollar Exchange Rate

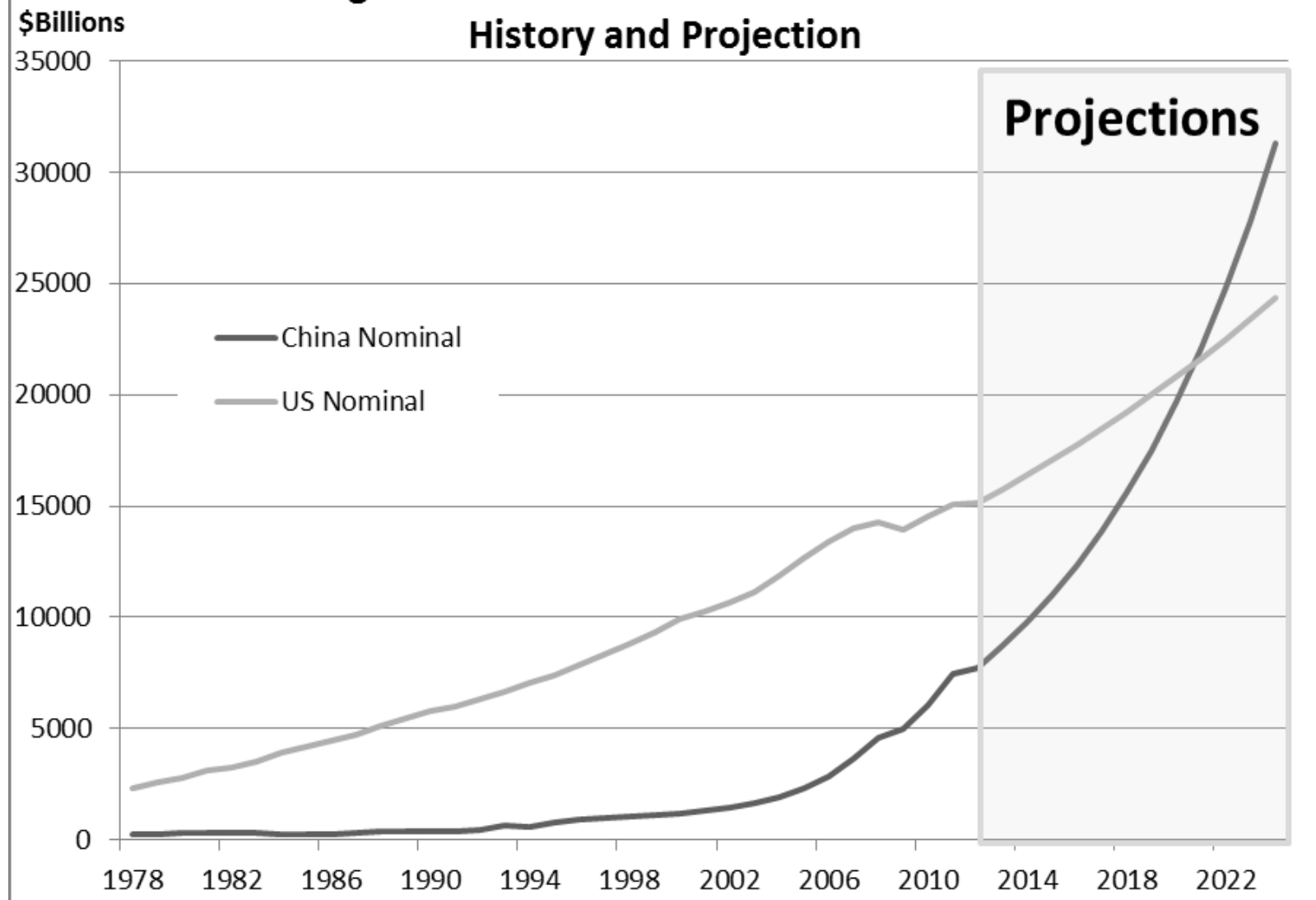
## A Worldwide Stabilizing Influence?

Ronald I. McKinnon  
Stanford University

Asian Development Bank  
Manila

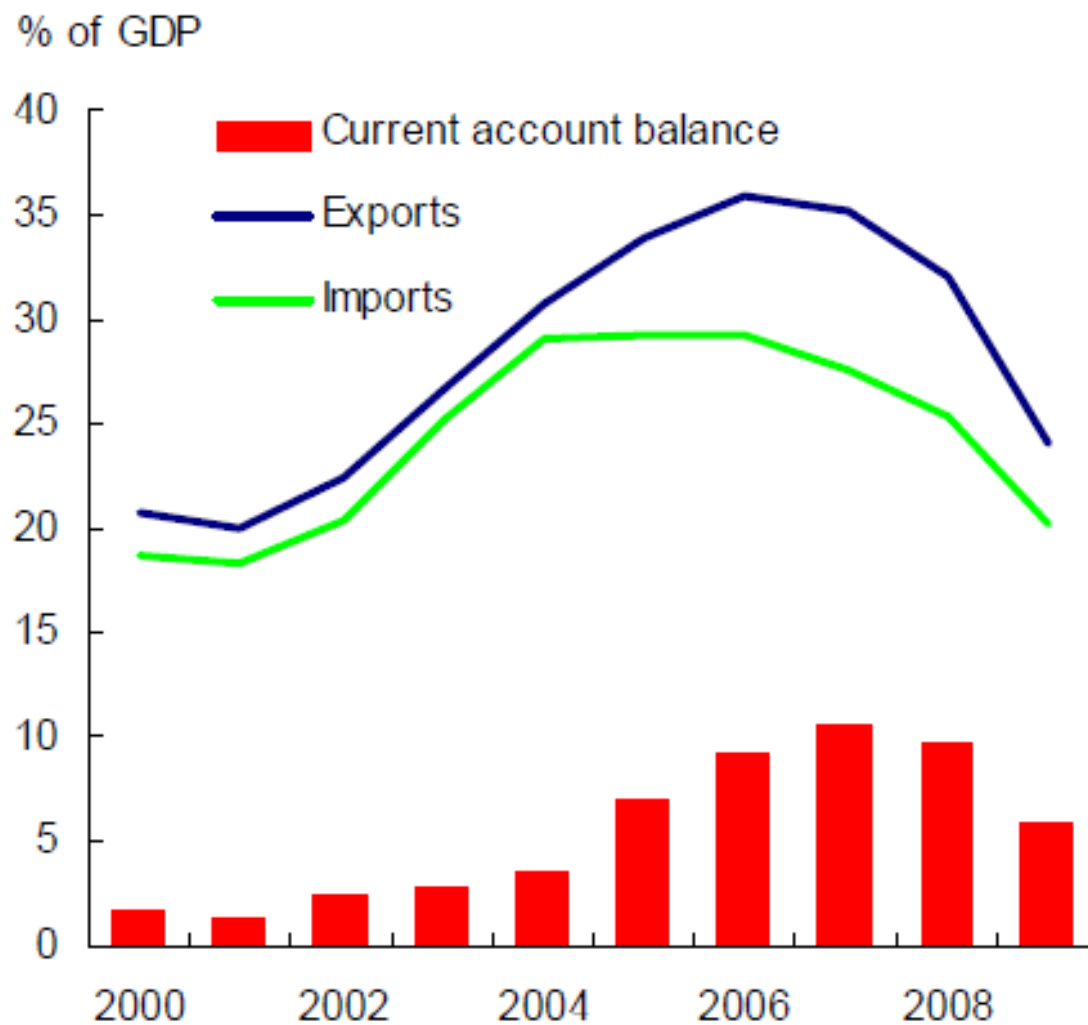
October 2012

**Figure 13.1: US and China Nominal GDP  
History and Projection**



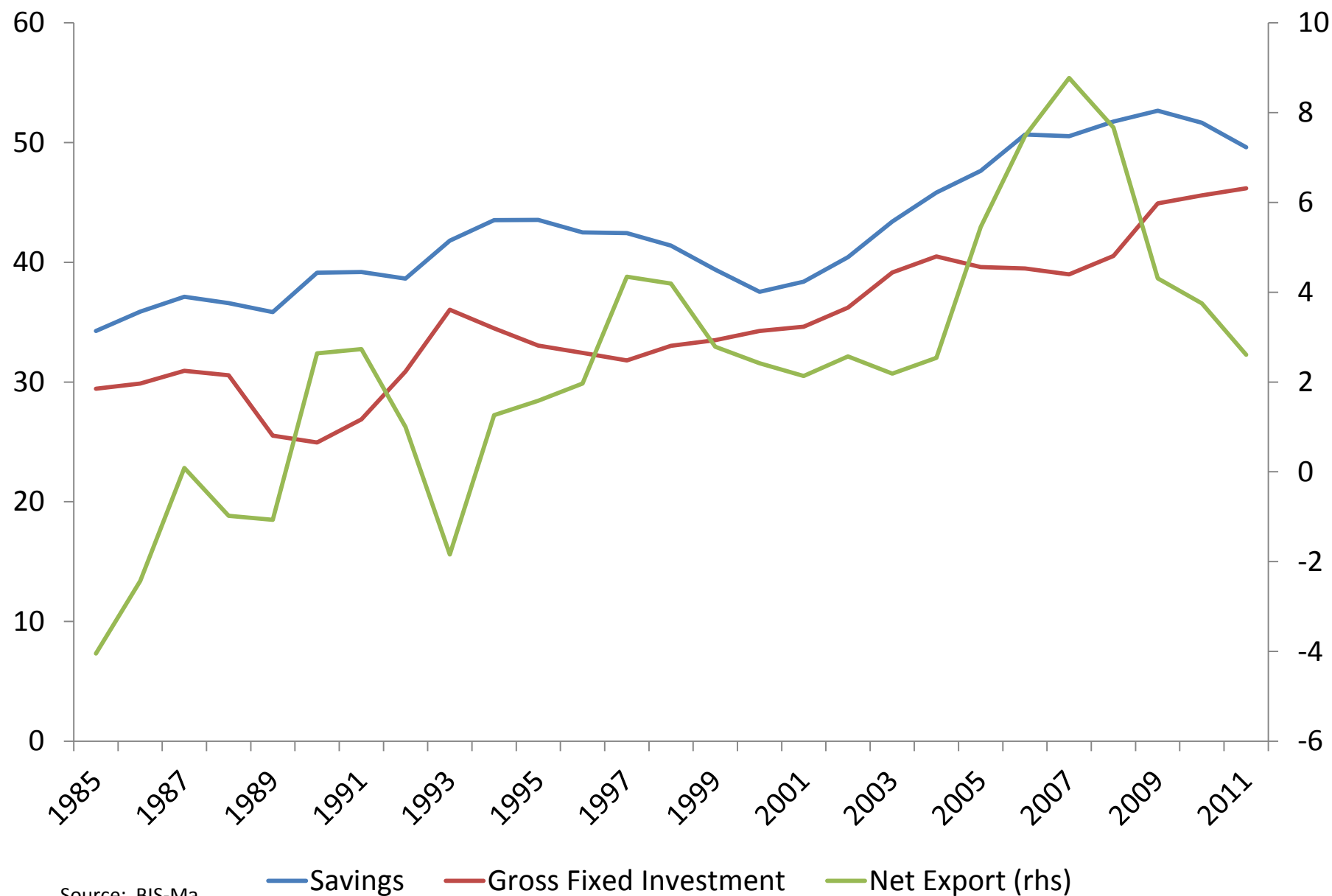
Source: International Financial Statistics, IMF, author's projection

## 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

Year	Trade Balance US\$	Trade Balance percent of GDP	Bilateral Trade Balance billion US\$	Bilateral Trade Balance percent of GDP
1980	-1	-0.33%	-2.8	-0.93%
1982	4.8	1.63%	-2.5	-0.86%
1984	0.1	0.01%	-1.5	-0.48%
1986	-7.4	-2.43%	-2.1	-0.69%
1987	0.3	0.09%	-1.8	-0.55%
1988	-4.1	-0.98%	-3.2	-0.78%
1990	10.7	2.64%	-1.3	-0.32%
1992	5.1	1.00%	-0.3	-0.06%
1994	7.4	1.26%	7.4	1.28%
1996	17.6	1.97%	10.5	1.18%
1998	43.8	4.19%	21.0	2.01%
2000	28.8	2.42%	29.8	2.50%
2002	37.4	2.57%	42.8	2.94%
2004	49.3	2.54%	80.4	4.14%
2006	208.9	7.49%	144.6	5.19%
2008	348.7	7.69%	171.1	3.77%
2009	220.1	4.36%	143.6	2.84%
2010	183.1	3.11%	181.2	3.08%
2011	155.1	2.07%	202.3	2.70%

**Figure 6: Bilateral Trade Balances of Japan and China versus the United States  
(percentage of U.S. GDP, 1955-2011)**

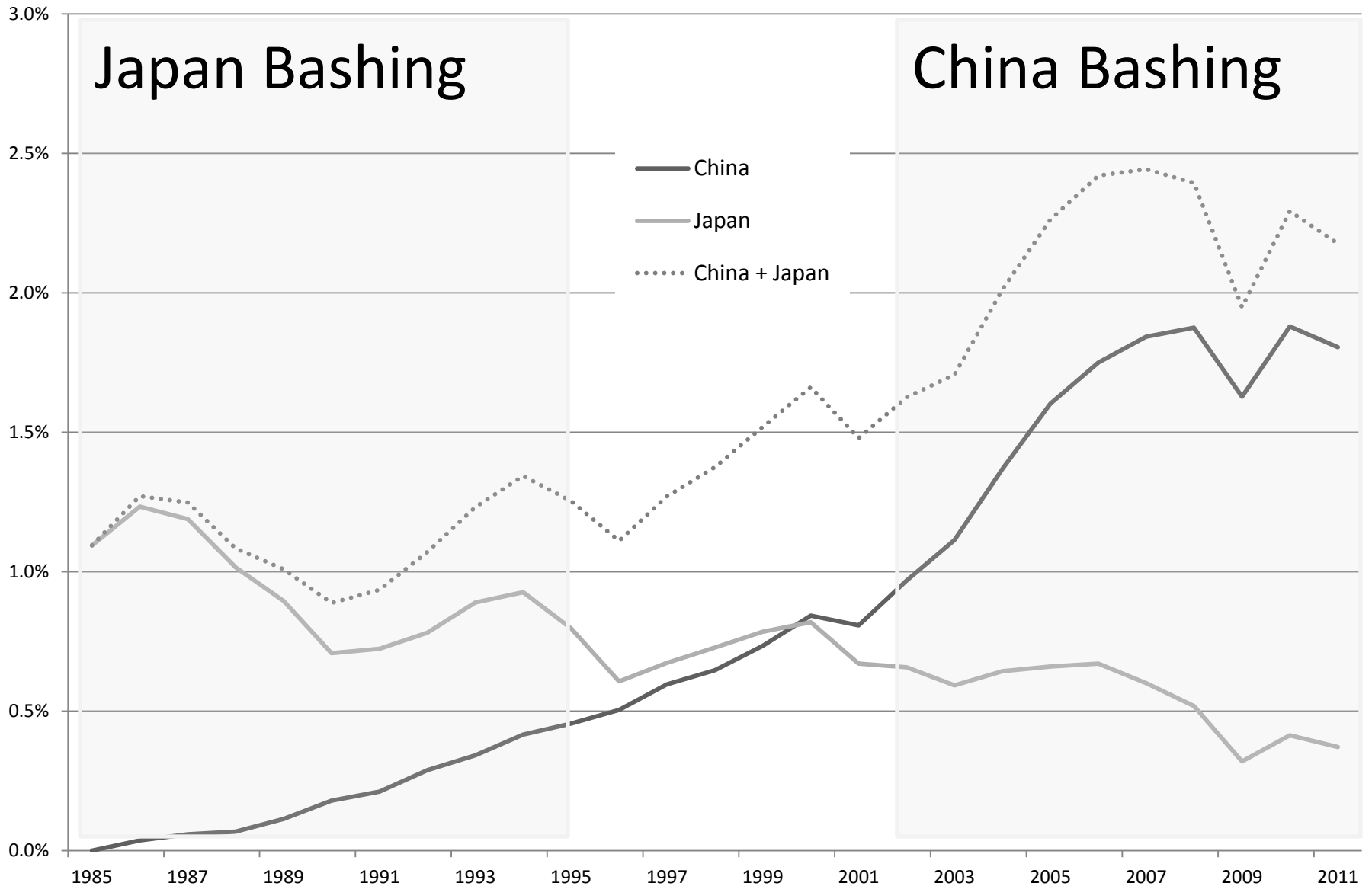
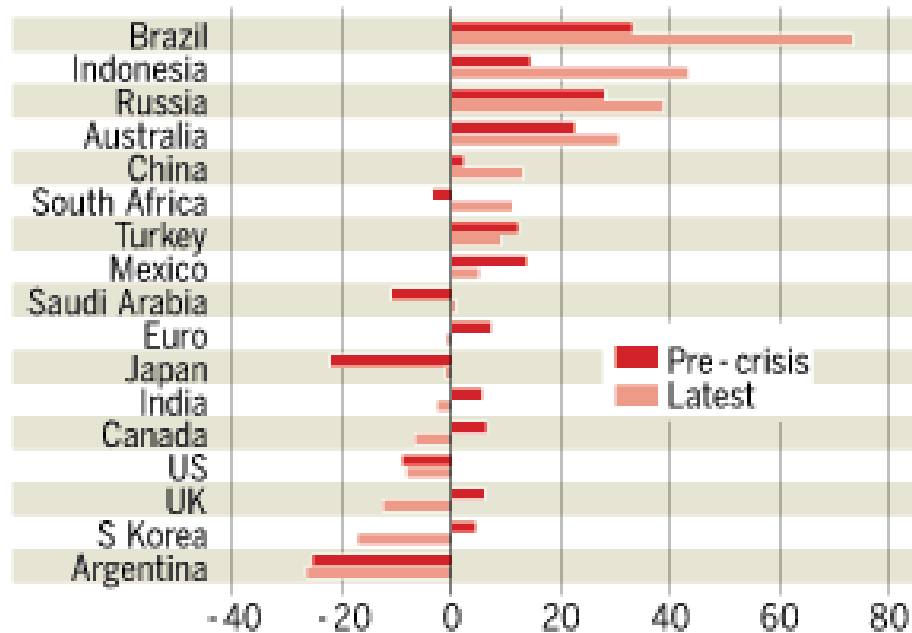


Figure 9: Exchange Rate Valuations

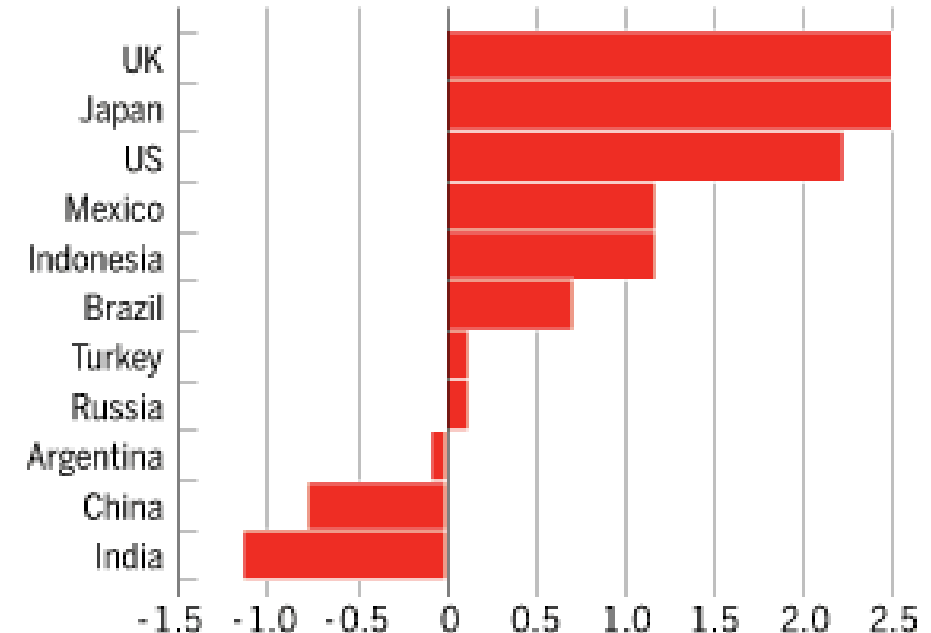
### Over/under valuation of G20 currencies

JP Morgan real broad exchange rate indices, valuation against long-term (1990-2010) average (%)



### Measurement of degree of capital account openness

2008, index\*

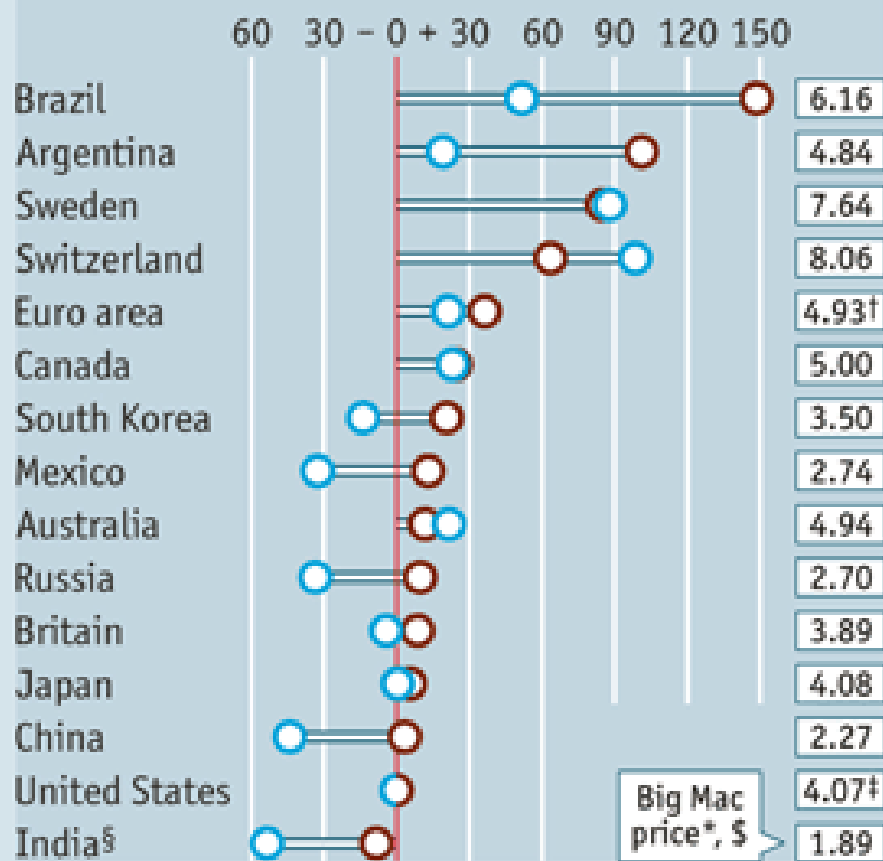


Big Mac prices v GDP per person,  
July 2011



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

○ Raw index      ○ Adjusted for GDP per person



\*At market exchange rate (July 25th) †Average of member countries

‡Average of four cities §Maharaja Mac

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.

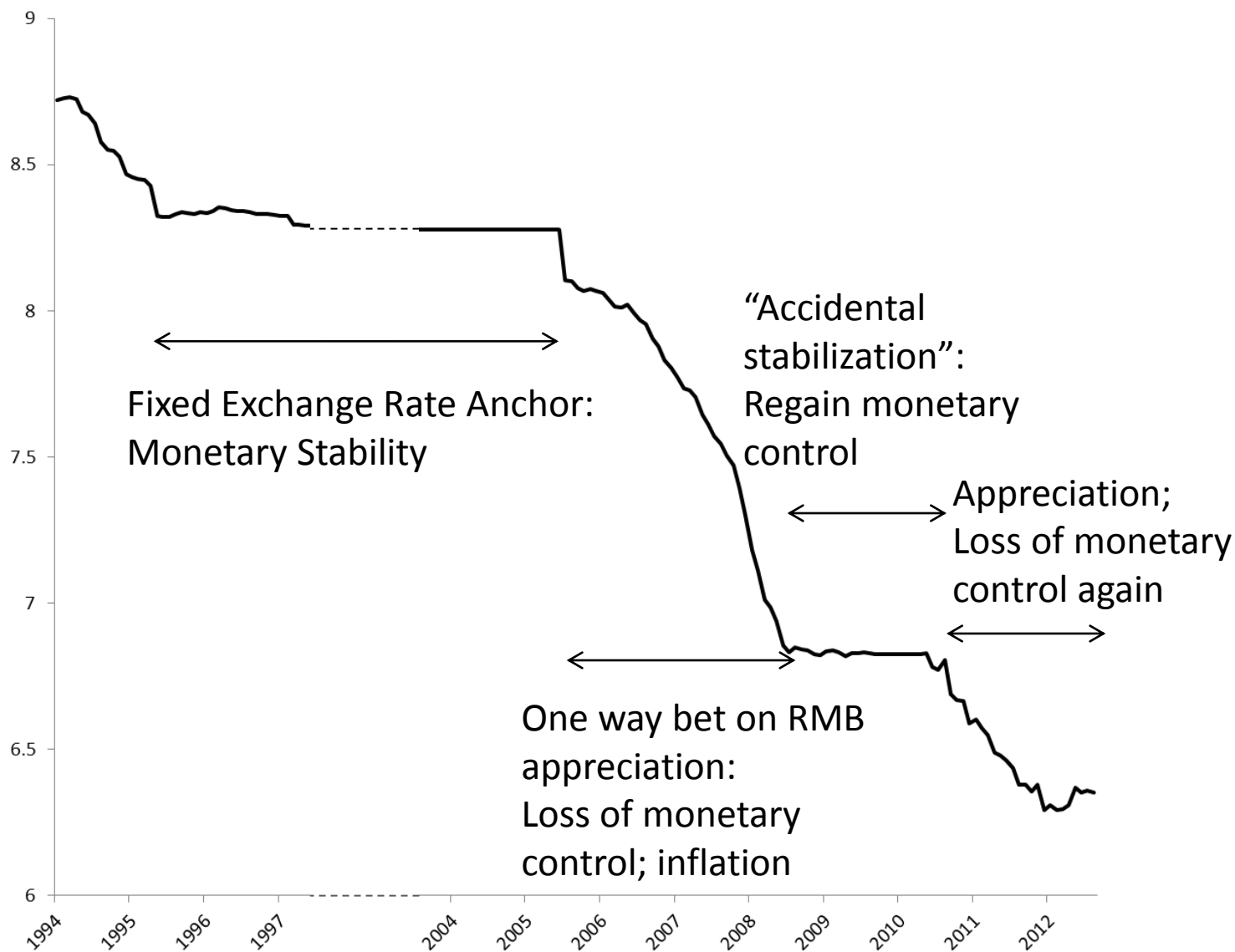
# U.S. Mercantile Pressure on China

- 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:

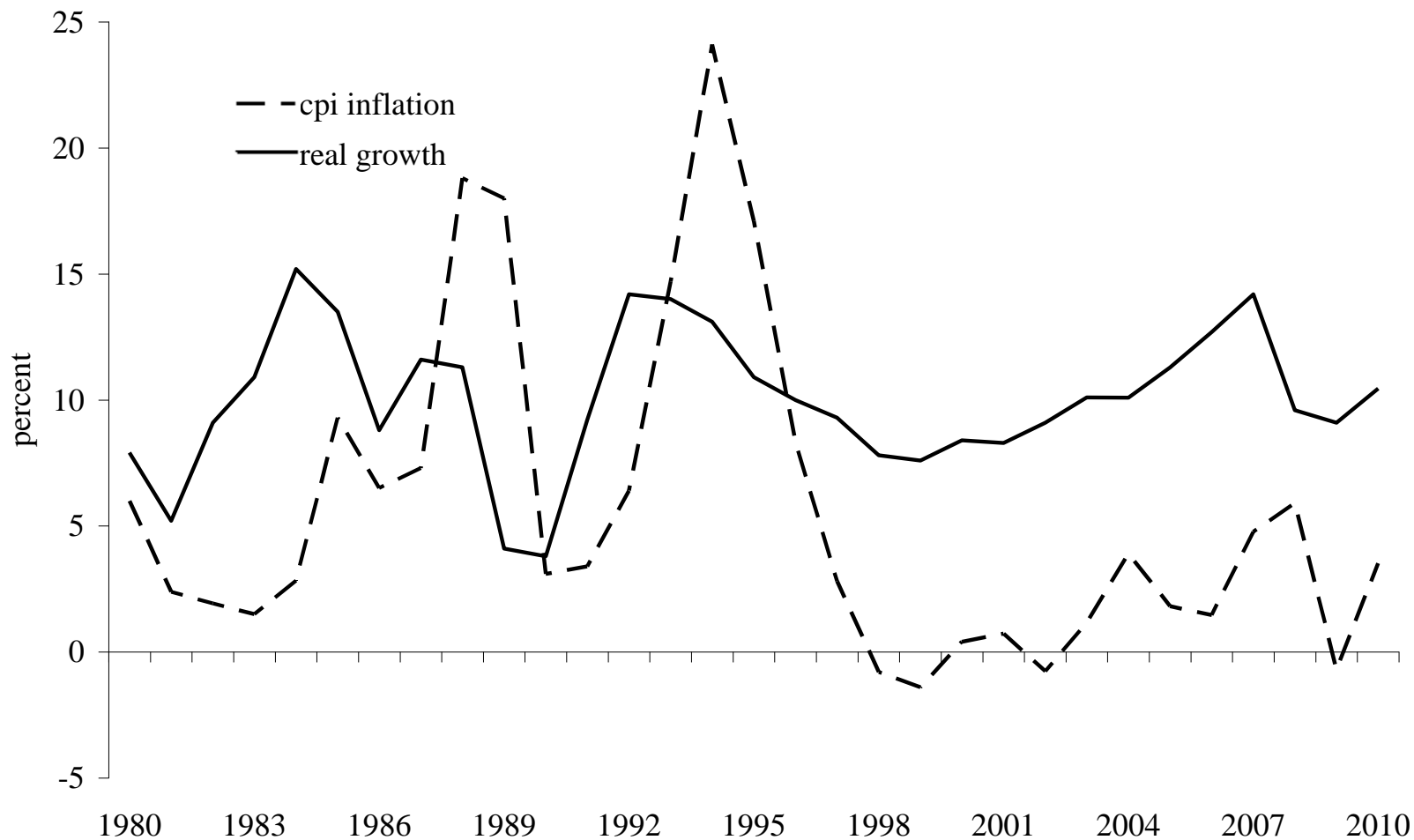
- Schumer-Graham bill of March 2005 for a 27.5% tariff on U.S. imports from China unless RMB appreciates (withdrawn October 2006, but new threat in 2007)
- Section 3004 of U.S. Public Law 100-418: U.S. Secretary of Treasury must report twice a year on whether countries with trade surpluses are “manipulating”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



Source: Federal Reserve Economic Data

# Real GDP Growth and Consumer Price Inflation, China, 1980-2010

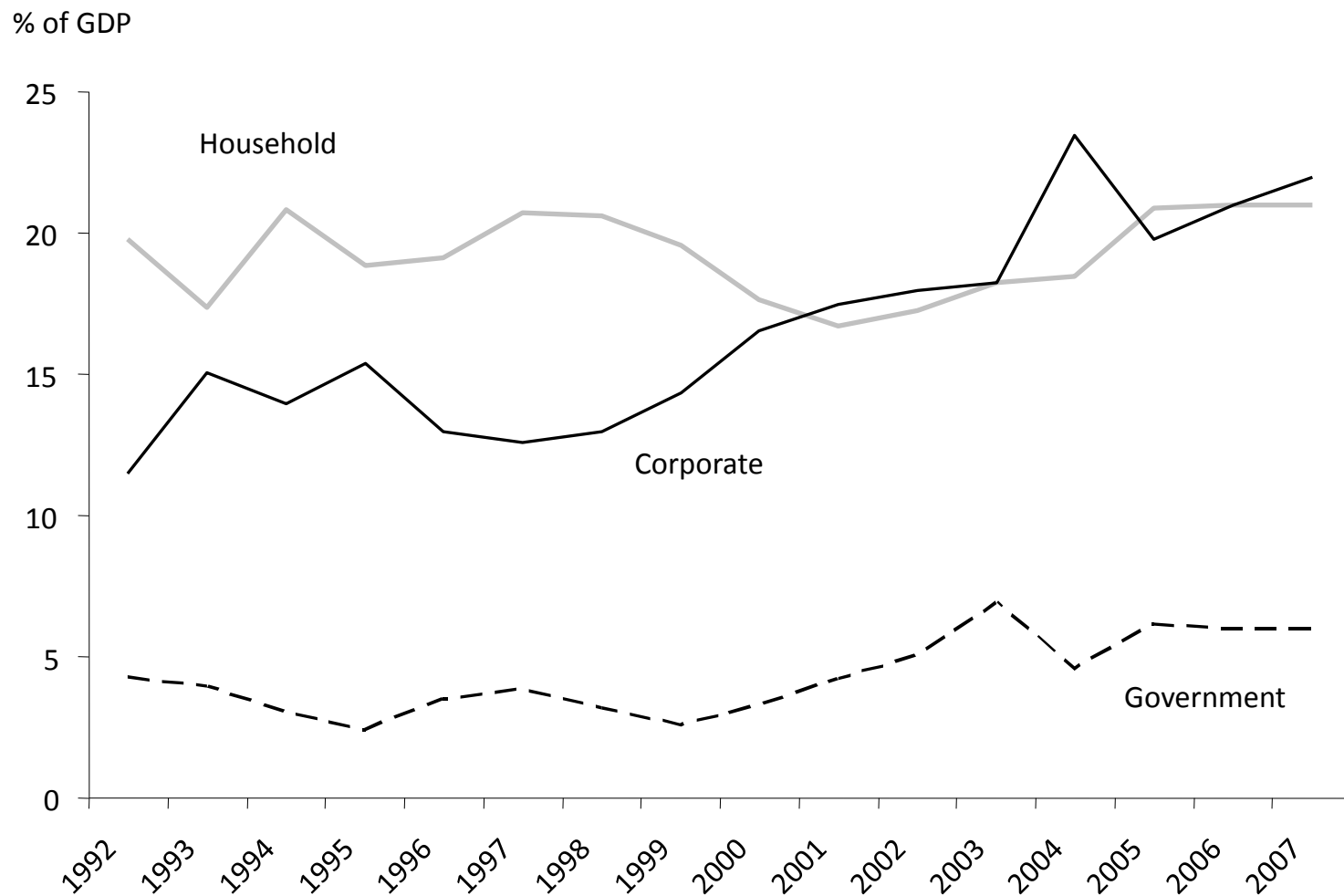


Source: IMF.

# The Yuan/Dollar Rate: A Potted History

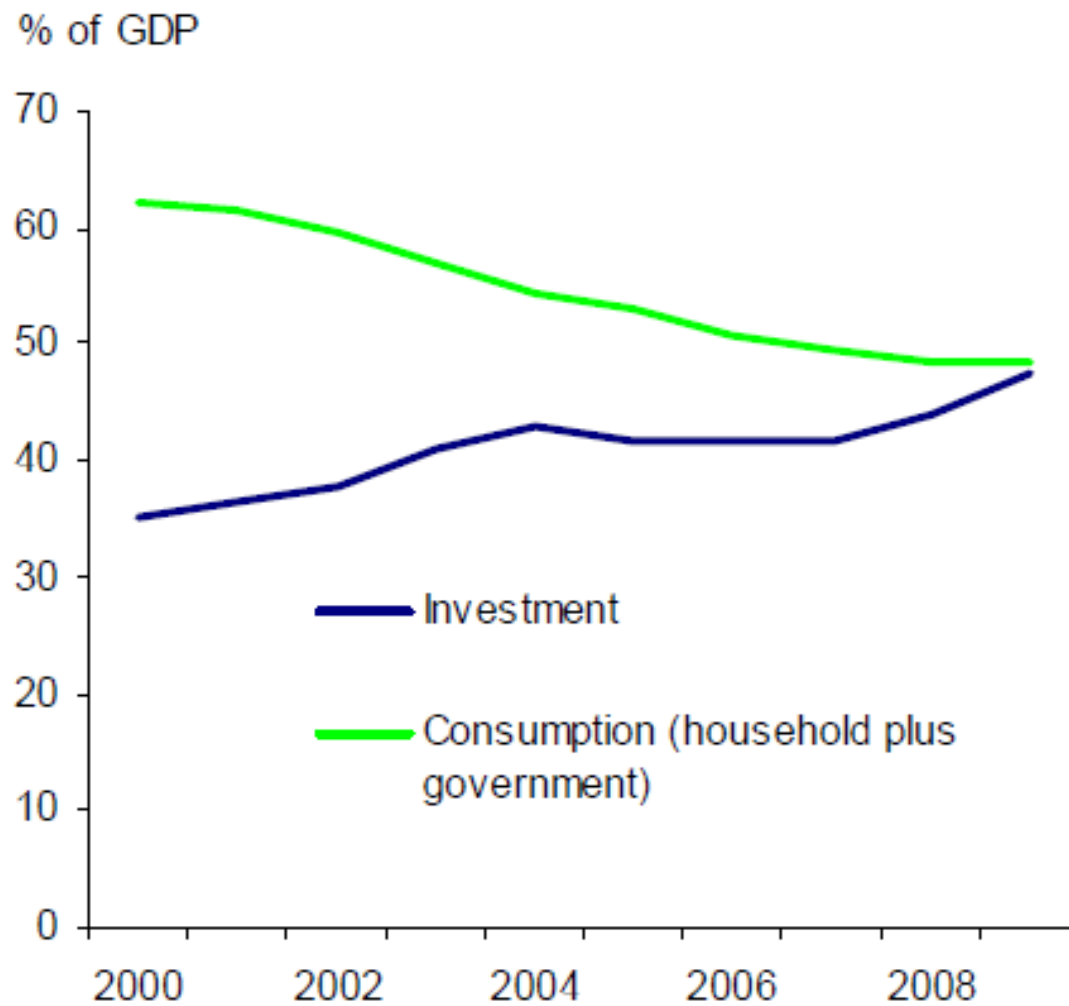
- 1995 to 2004 rate fixed at 8.28 Y/\$ to stop inflation and anchor price level
- July 2005 to July 2008, one-way bet on gradual RMB appreciation: hot money inflows, buildup of official exchange reserves, loss of monetary control, disruption of forward exchange market.
- Y/\$ rate reset at 6.83 July 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



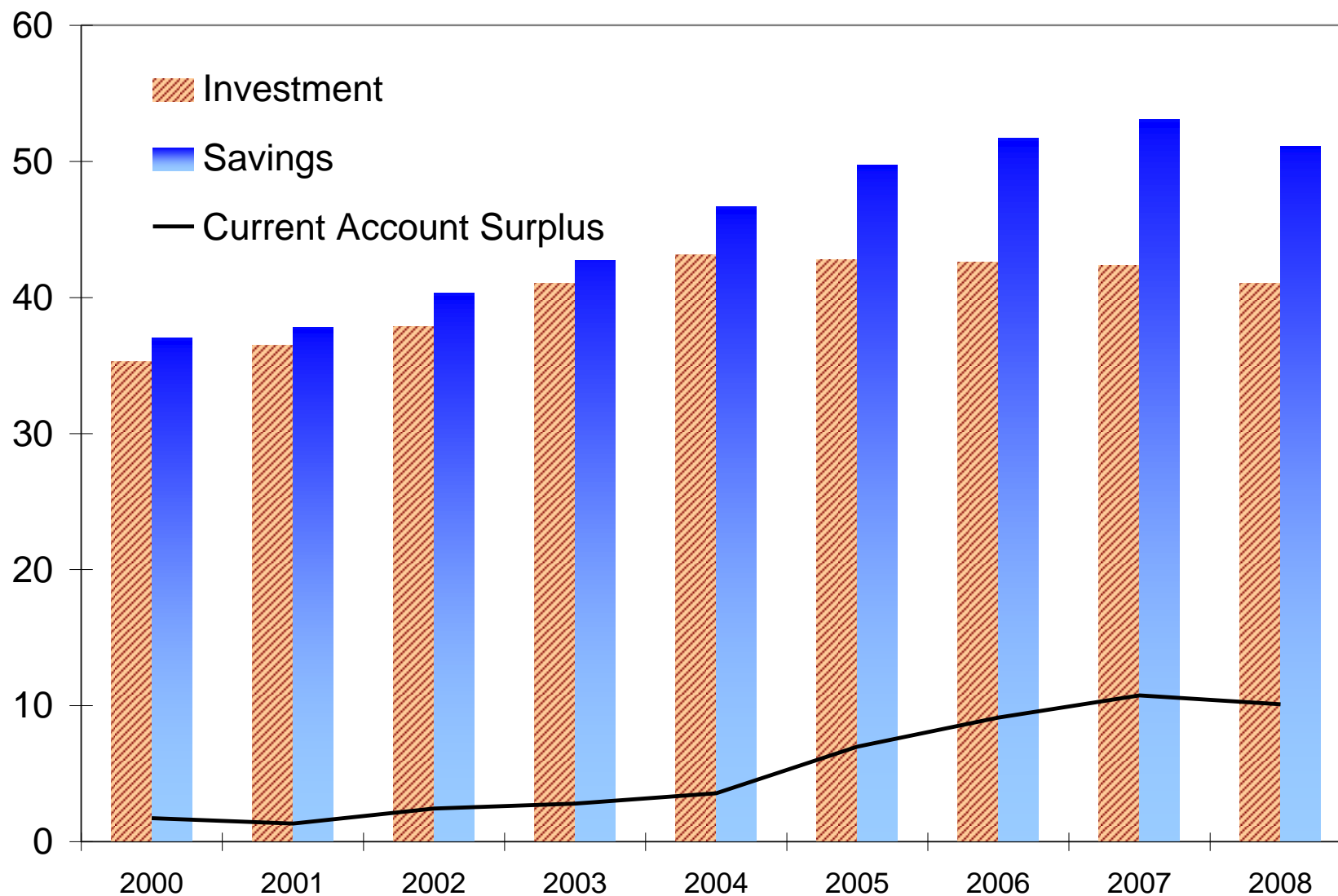
Source: CEIC, GS Global ECS Research.

## 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

$$\mathbf{X - M = S - I = \text{Trade (Saving) Surplus}}$$

**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:*

$X \downarrow$   $M \uparrow$  and trade surplus declines

- *Absorption Approach:*

$S \updownarrow$   $I \downarrow$  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.

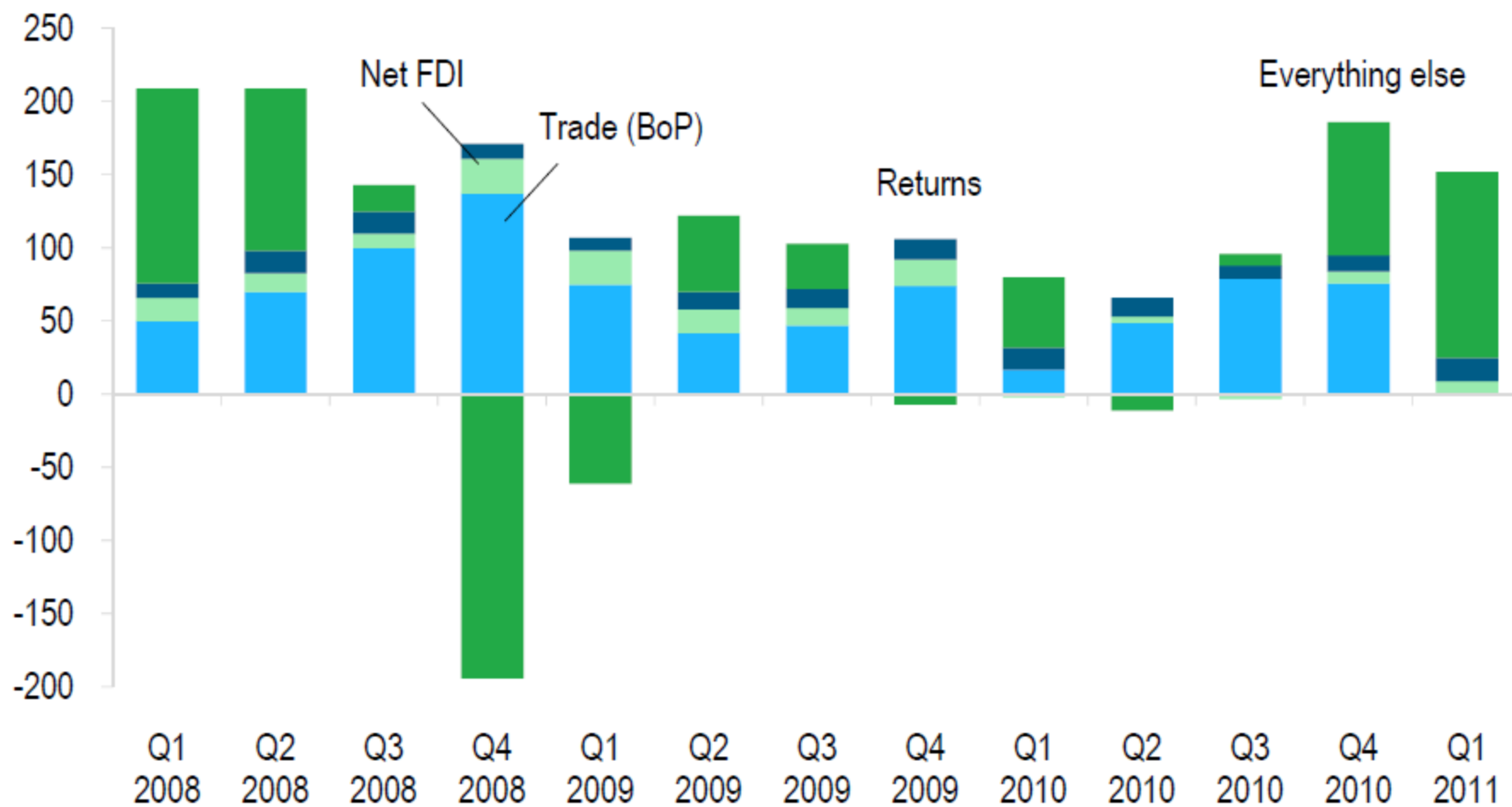
- Japan's experience with ever-higher yen, 1971 – 95:  
Investment eventually slumped with general deflation, followed by “lost” decades, but the trade surplus remained.

# 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

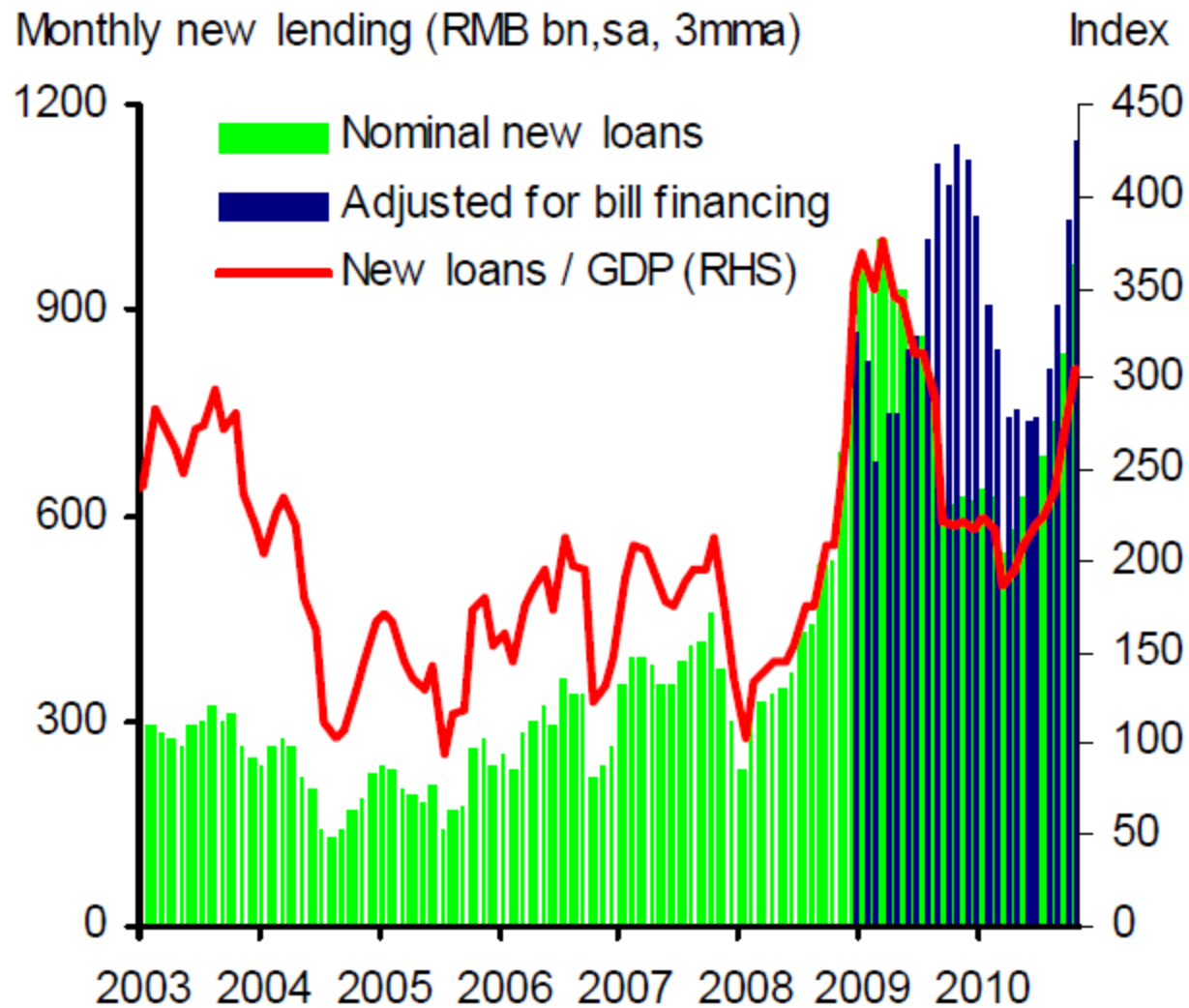
## Composition of China's Foreign Exchange Reserve

USD bn



Source: Standard Chartered Research

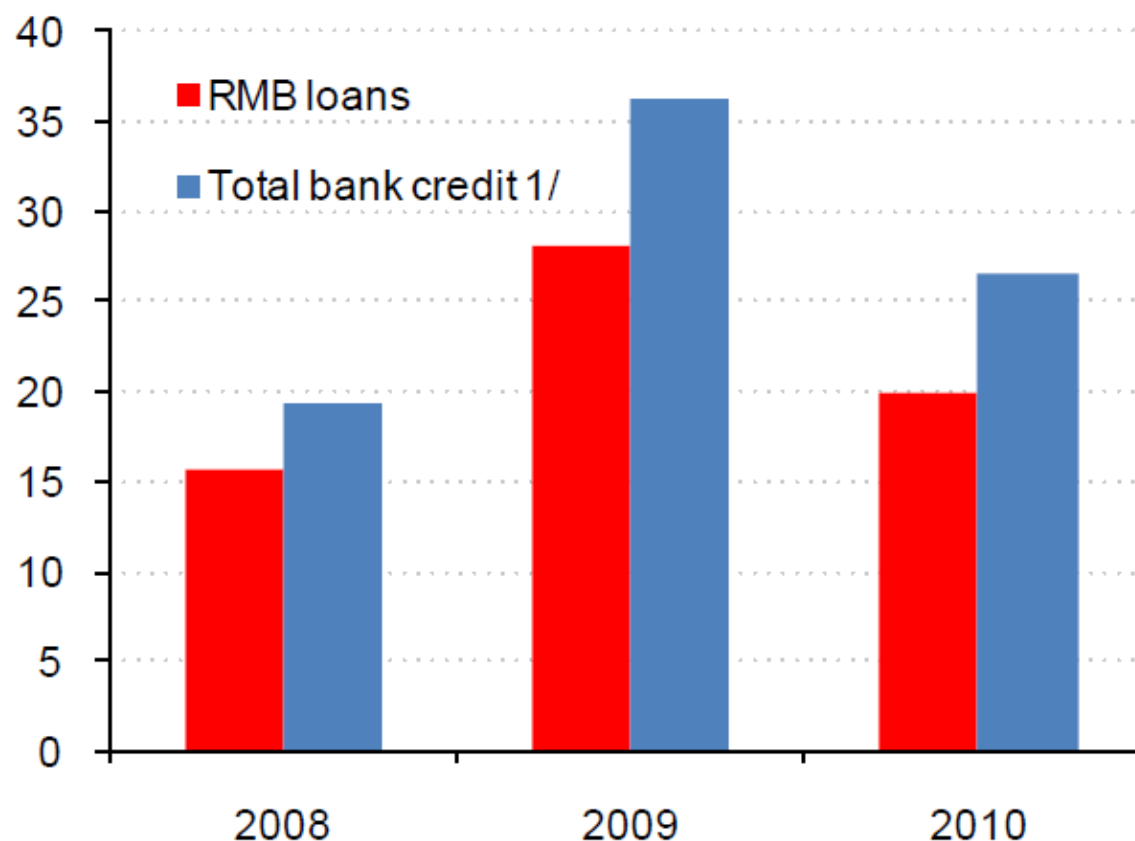
**Figure 5: Historical Lending Activities of Chinese Commercial Banks**



Source: UBS

## China's Bank Credit

Ratio (% GDP)

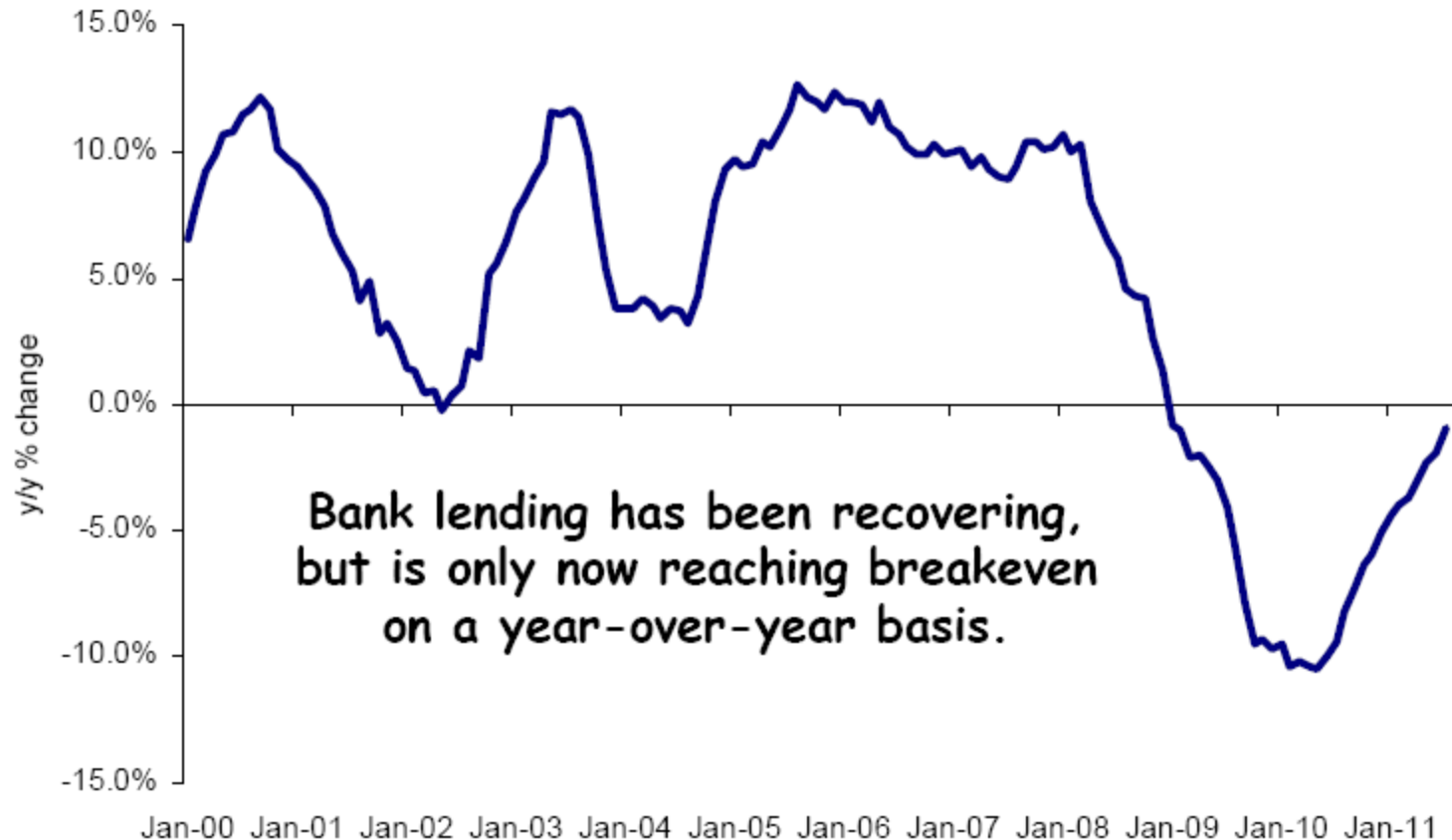


Source: CEIC, World Bank staff estimates.

1/ Includes FX loans and trust loans, designated loans, corporate paper and medium term notes.

# US Bank Lending

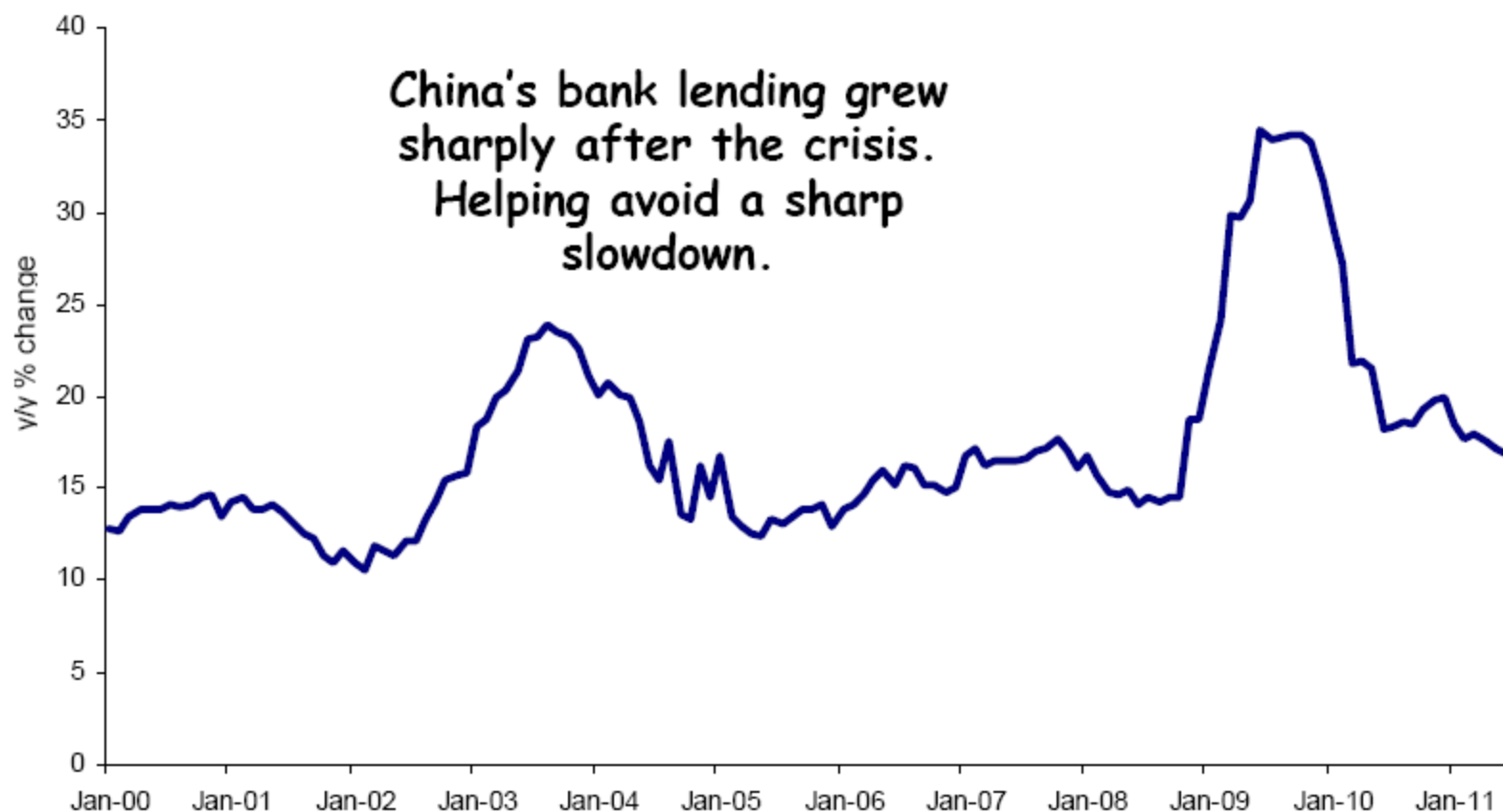
(last obs. June 2011, estimate for July 2011)



Source: Federal Reserve; Encima Global

# China Bank Lending

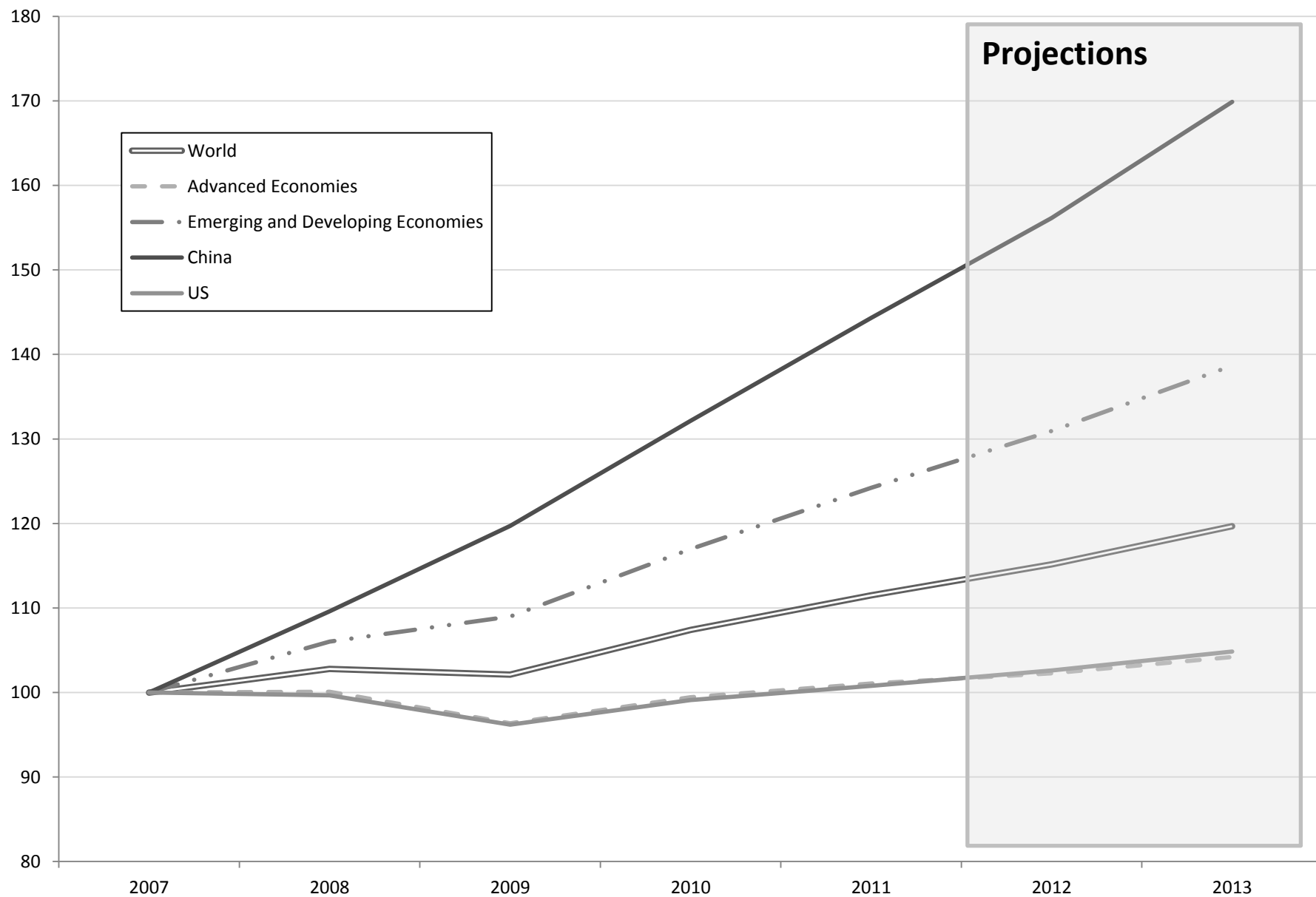
(last obs. June 2011)



Source: Bloomberg; Encima Global



**World's real GDP in recoveries (2007=100)**



# 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

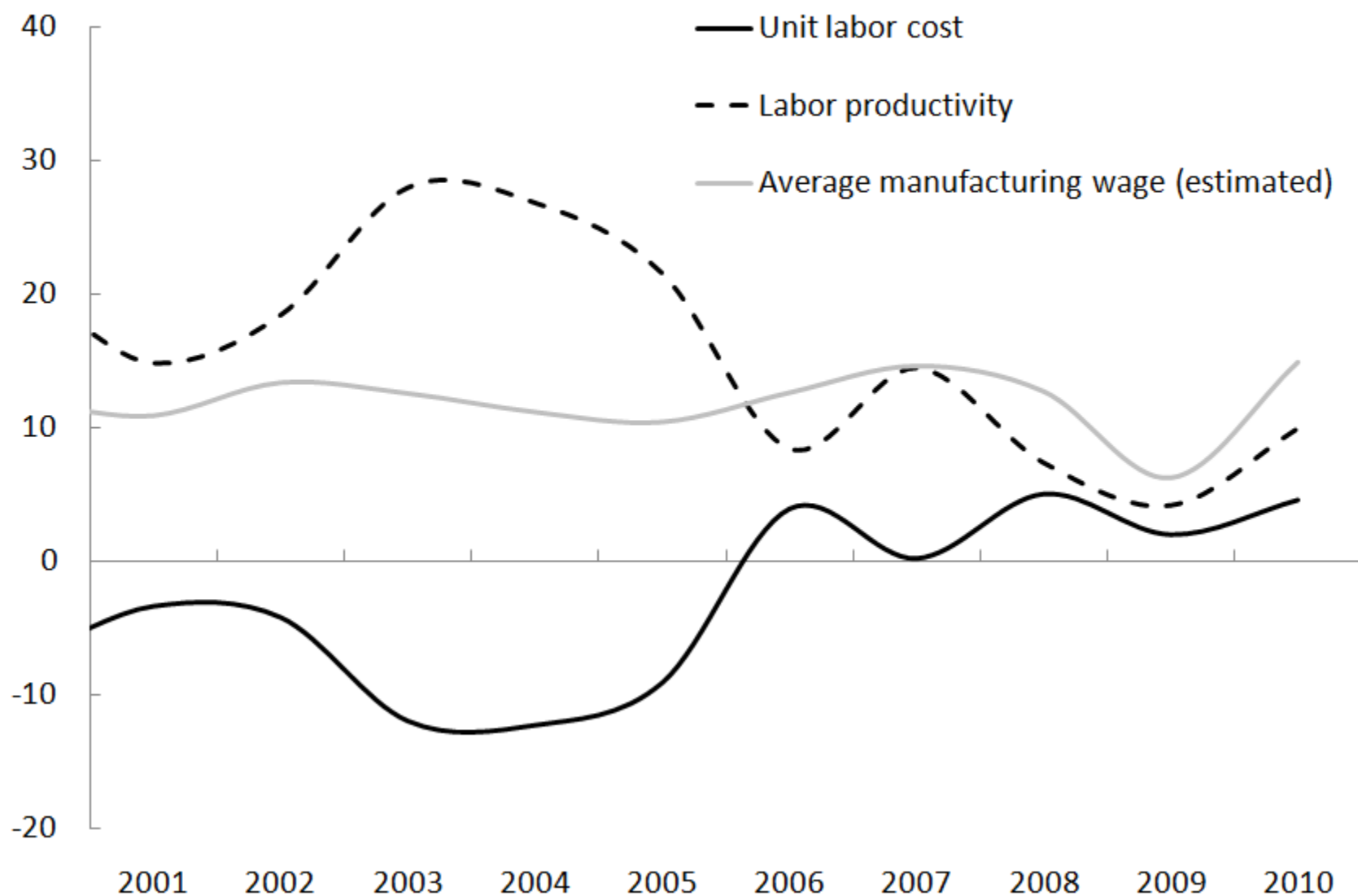
## Chinese Wage Growth

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

Source: CEIC, GS Global ECS Research

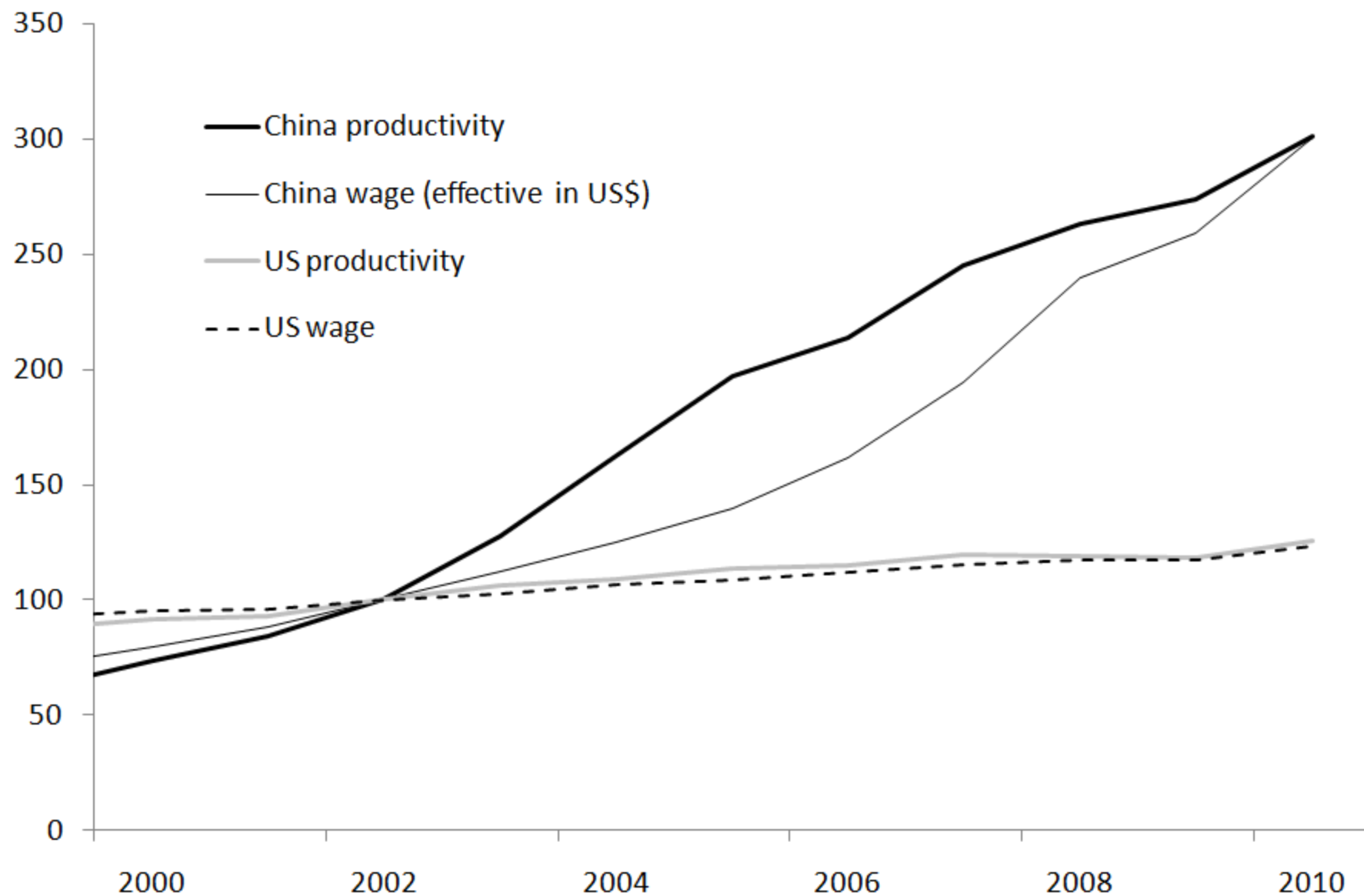
## Manufacturing Sector Wage, Labor Productivity and ULC

% chg yoy



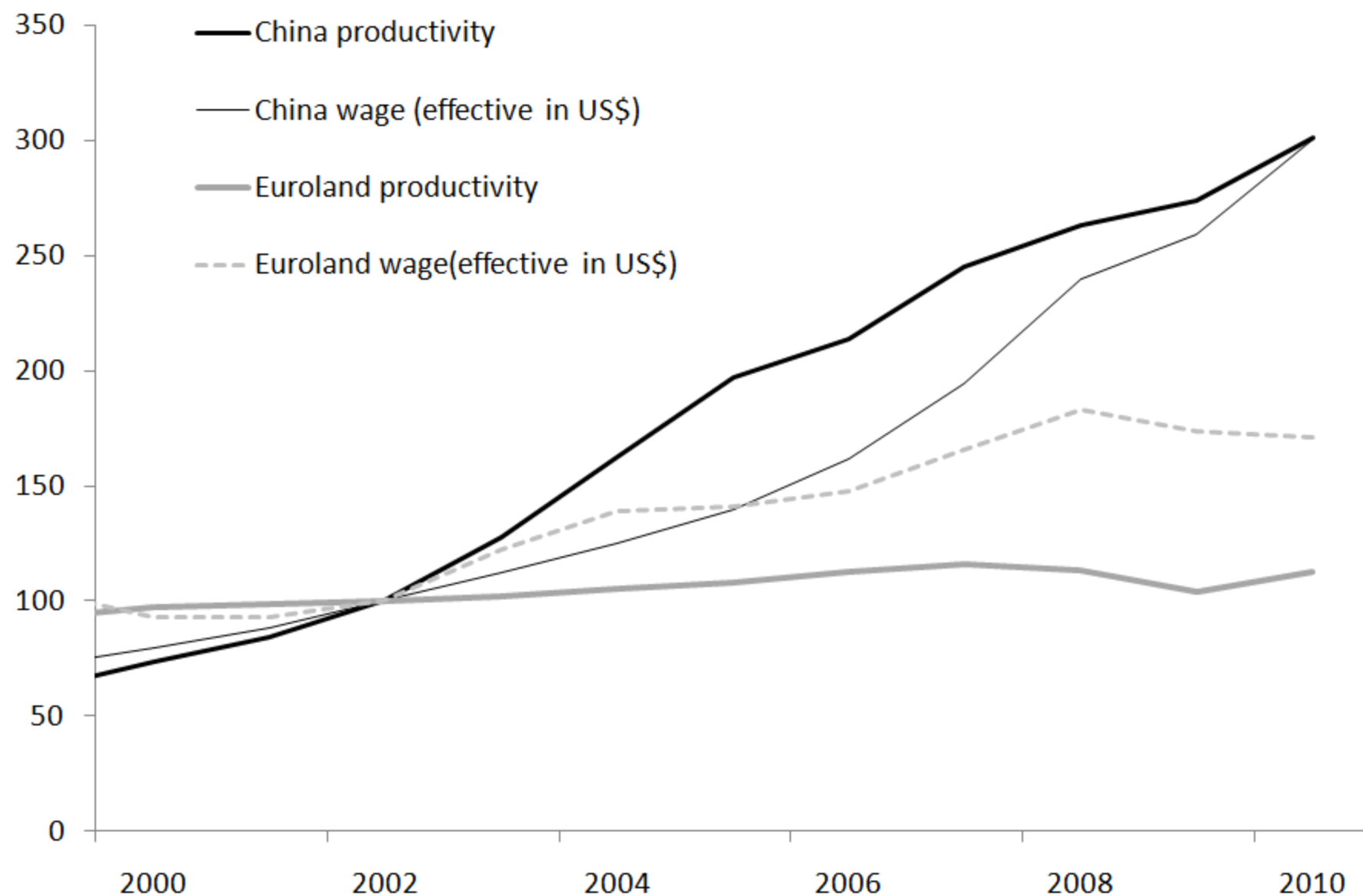
Source: CEIC, GS Global ECS Research

Base year = 100



Source: CEIC, GS Global ECS Research

Base year = 100



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)

<b>Wholesale prices</b>		<b>Money wages</b>		<b>Consumer prices</b>		<b>Industrial production</b>	
U.S.	Japan	U.S.	Japan	U.S.	Japan	U.S.	Japan
1.63	0.69 <sup>a</sup>	4.52	10.00	2.53	5.01	4.40	14.56
<b>Real GDP</b>		<b>Nominal GDP</b>		<b>Narrow money</b>		<b>Labor productivity</b>	
U.S.	Japan	U.S.	Japan	U.S.	Japan	U.S.	Japan
3.84	9.45 <sup>a</sup>	6.79	14.52 <sup>a</sup>	3.94	16.10 <sup>b</sup>	2.55	8.92 <sup>c</sup>

*Source: IFS, Japan Economic Yearbook, Economic Survey of Japan, OECD Economic Surveys and Bureau of Labor Statistics.*

a1952-1971.

b1953-1971.

c1951-1971.

# Manufacturing Wage Growth for U.S. and Japan 1950-71 with Exchange Rate Fixed at 360 Yen per Dollar

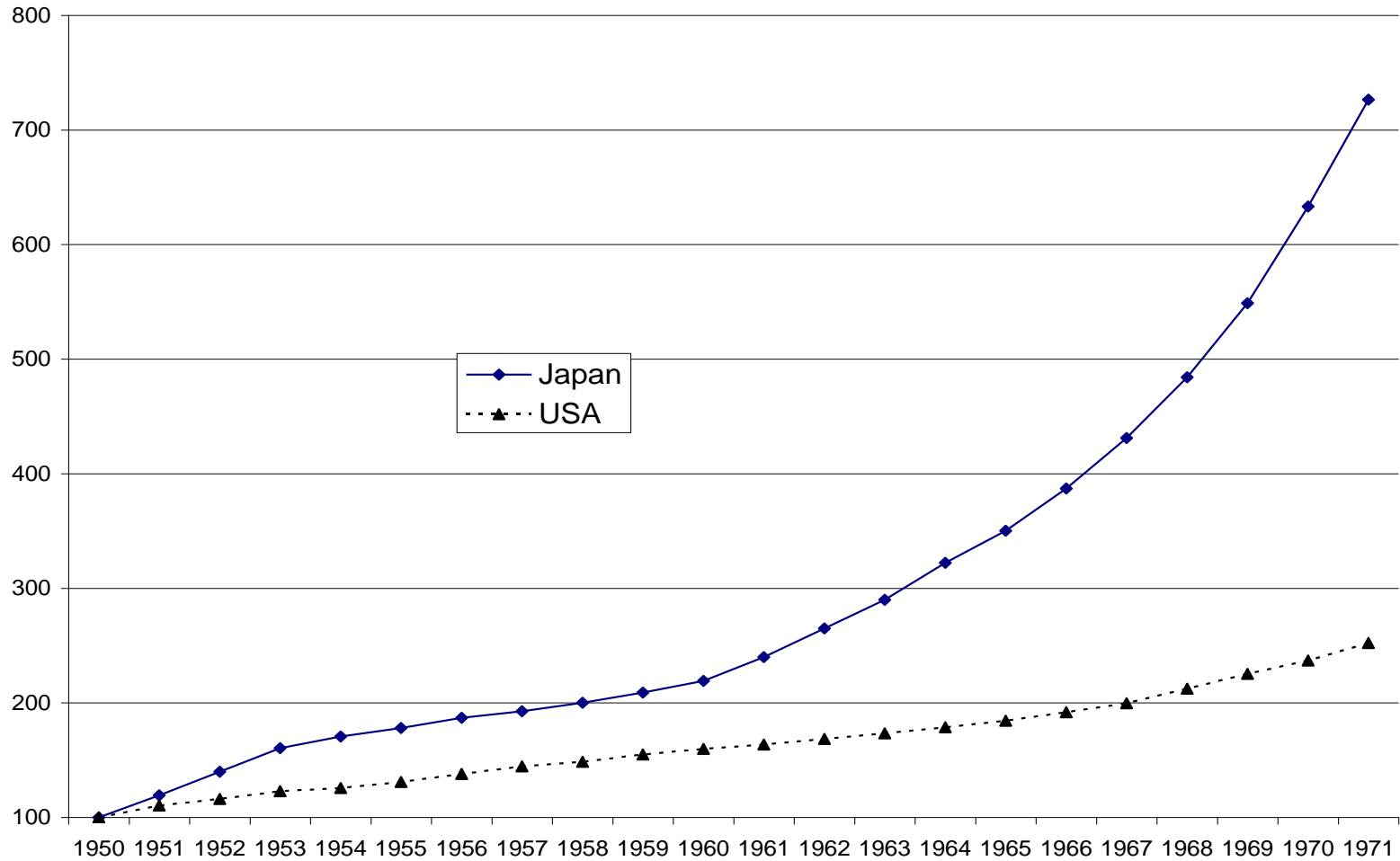
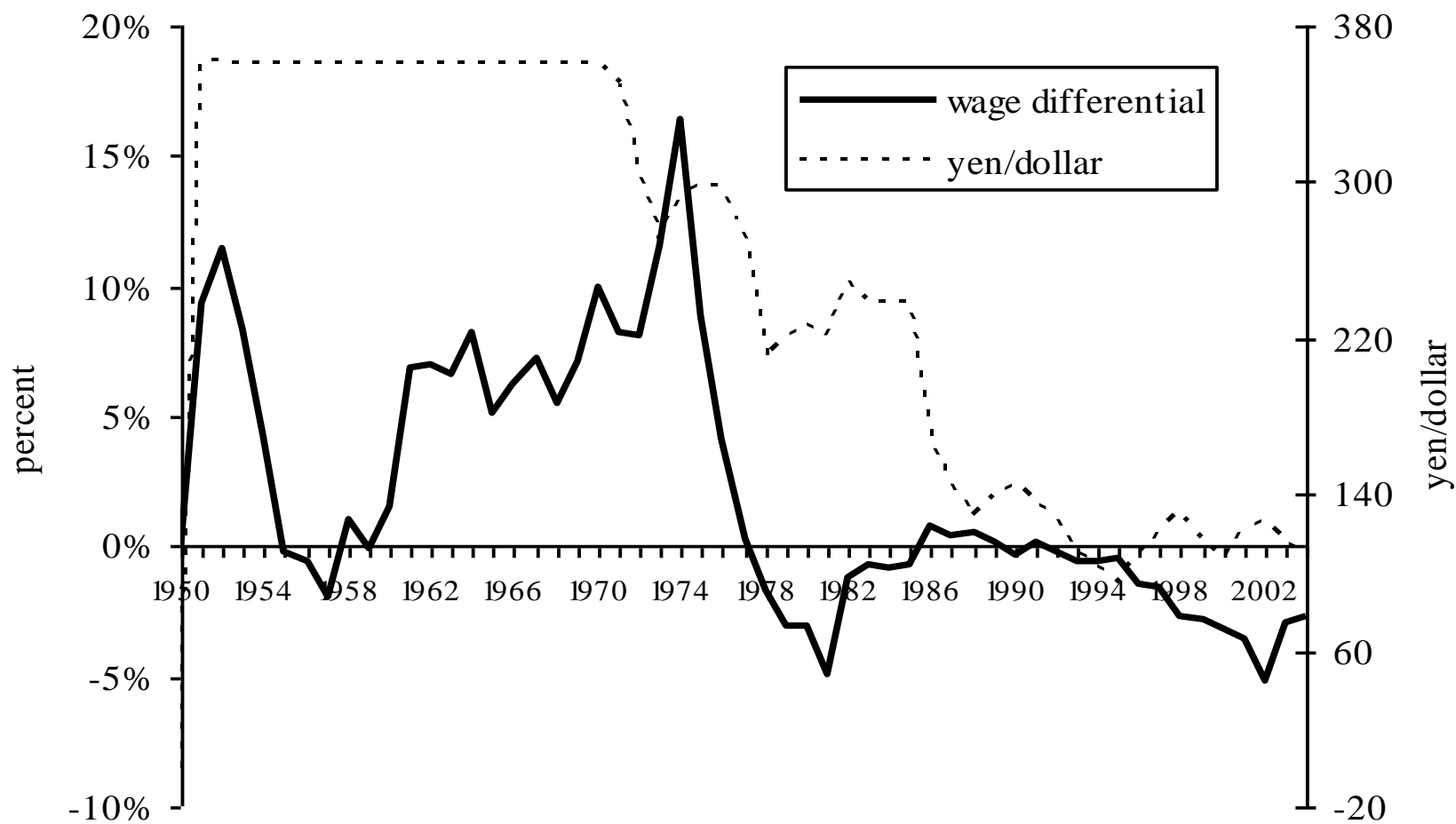
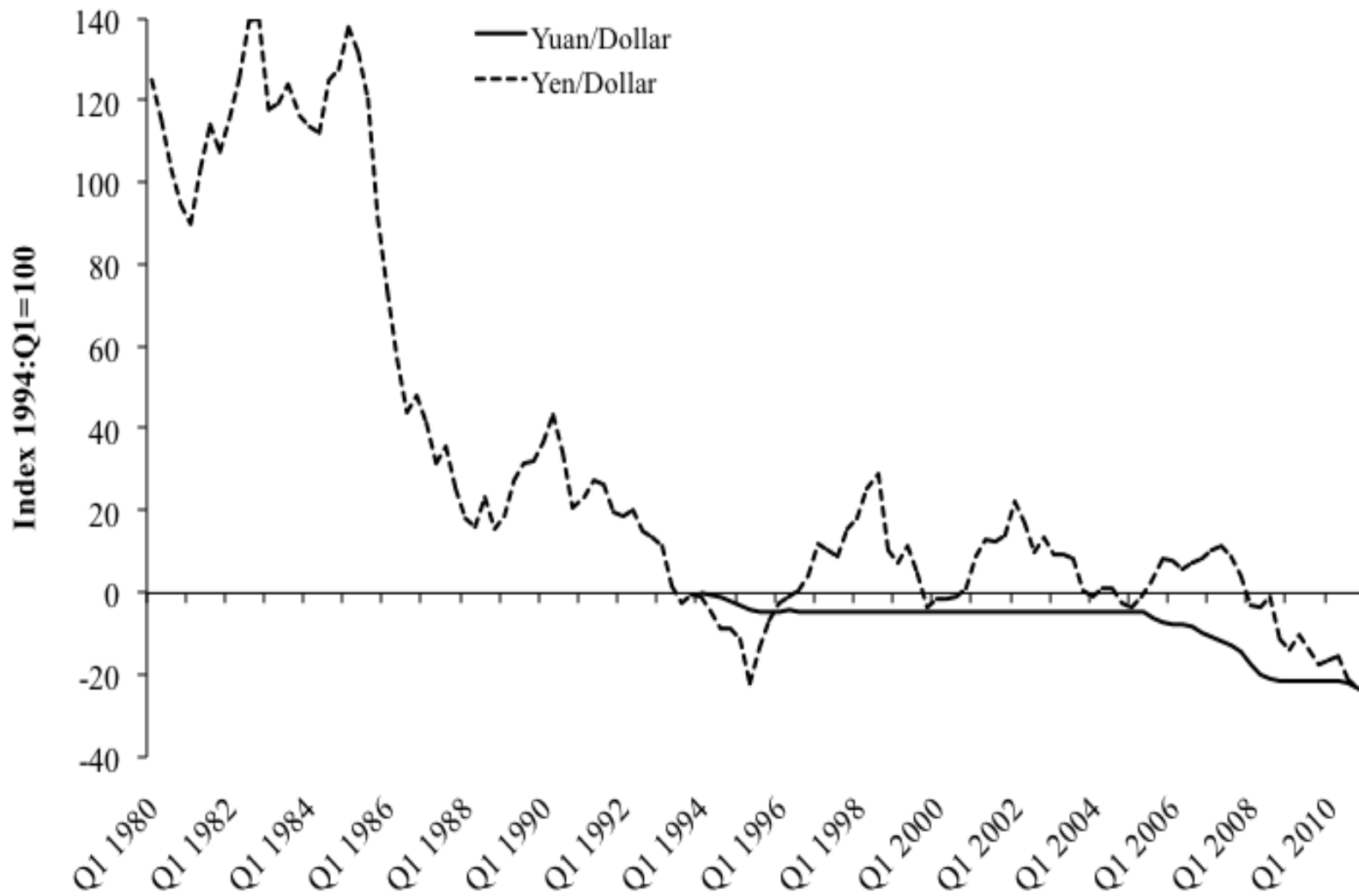


Figure 2: Differential in Wage Growth between Japan and U.S., and Yen/Dollar Rate, 1950-2004



## Yen and Yuan against the Dollar



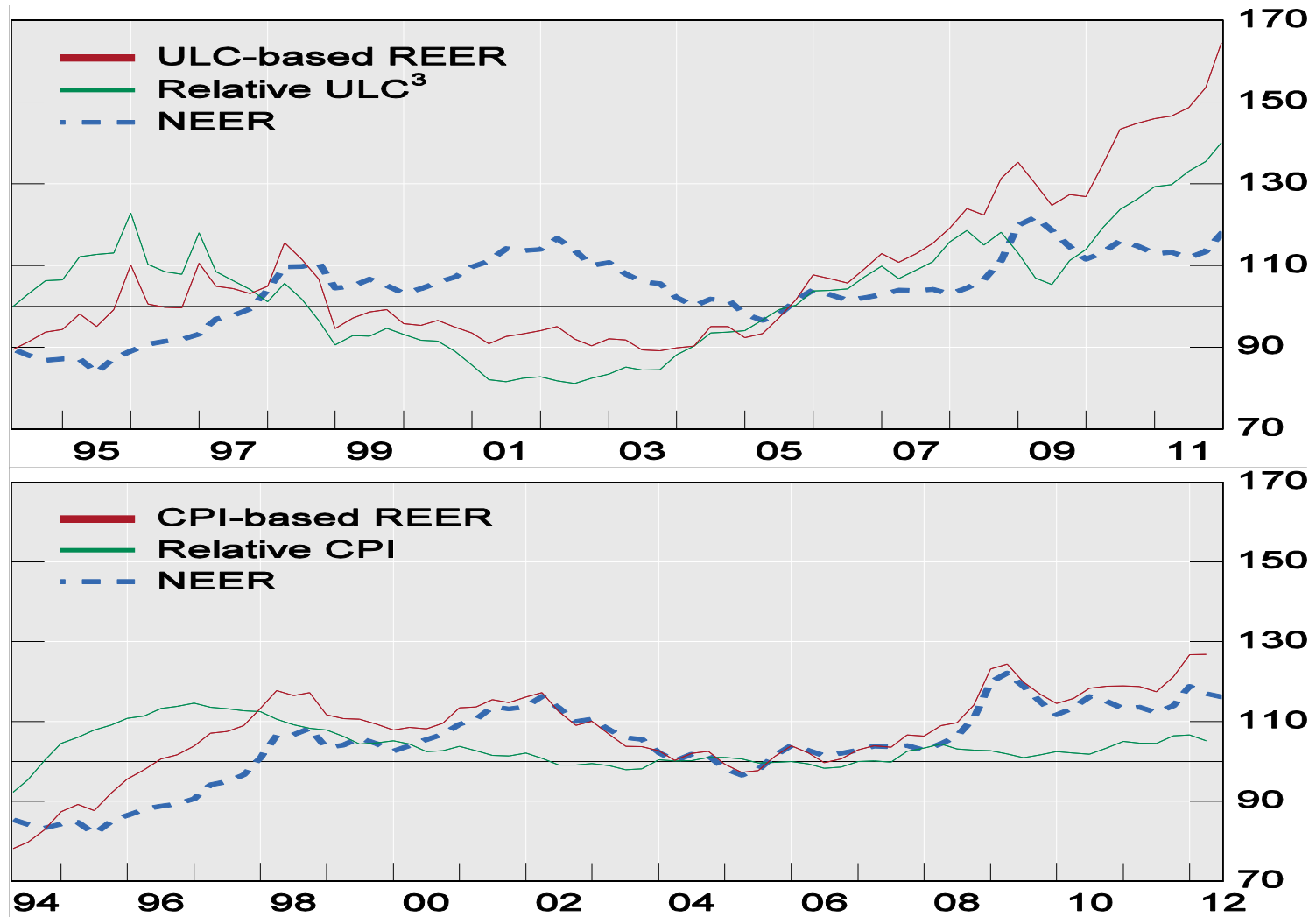
Source: Datastream

# 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

# Real effective exchange rates for the renminbi and their components

2005 = 100



Source: Ma, McCauley and Lam, 2012

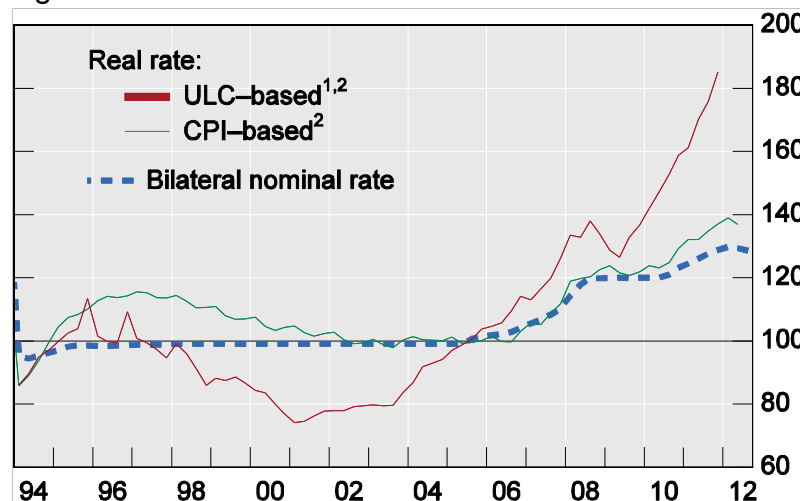
<sup>1</sup> The CPI-based REER and NEER of the broad BIS basket consisting of 61 trading partners' currencies. <sup>2</sup> The ULC-based REER basket covers 43 trading partners' currencies, with a combined trade weight of 95% of the broad BIS basket for the renminbi. The 43 BIS trade weights are renormalized for our ULC-based REER basket. <sup>3</sup> 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.

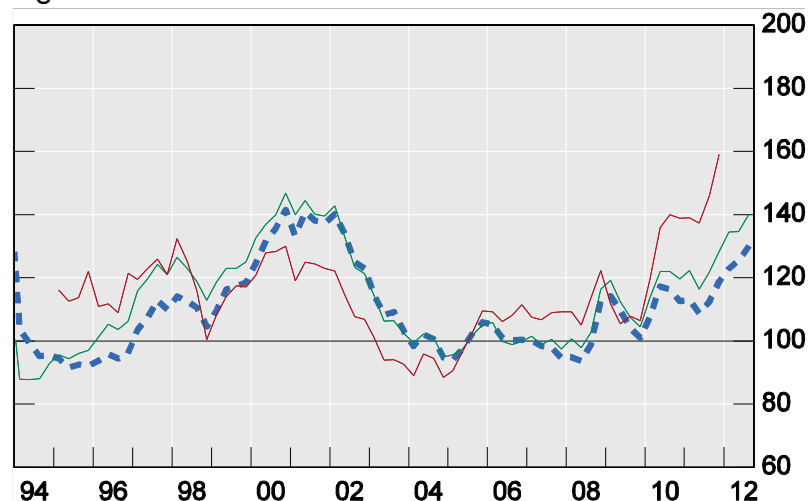
# Real bilateral and effective exchange rates for the renminbi

2005 = 100

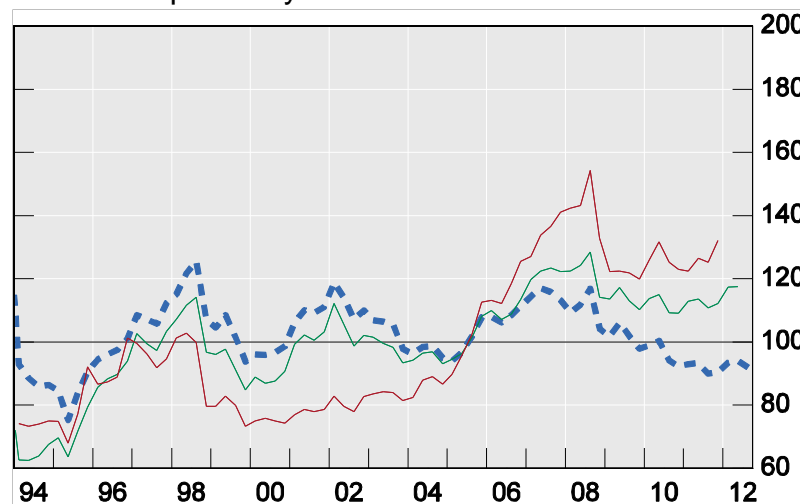
Against US dollar



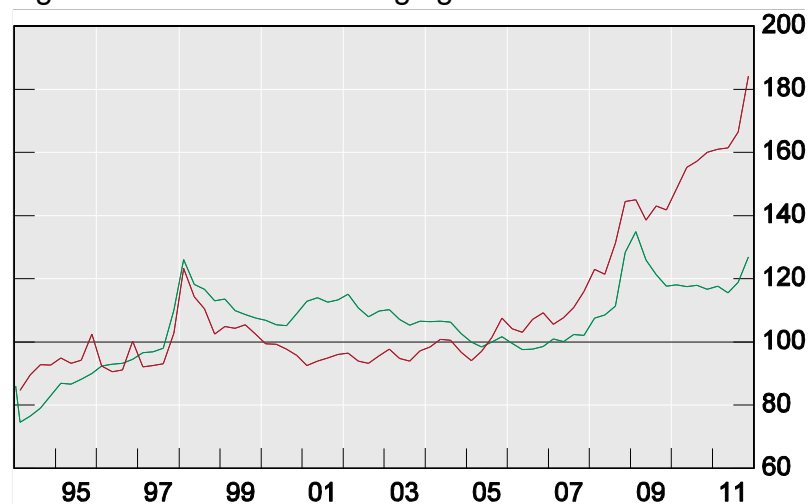
Against euro



Bilateral Japanese yen



Against currencies of emerging market<sup>3</sup>



Source: Ma, McCauley and Lam, 2012

<sup>1</sup> 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. <sup>2</sup> Nominal bilateral rate adjusted for the relative ULC or CPI. <sup>3</sup> 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.

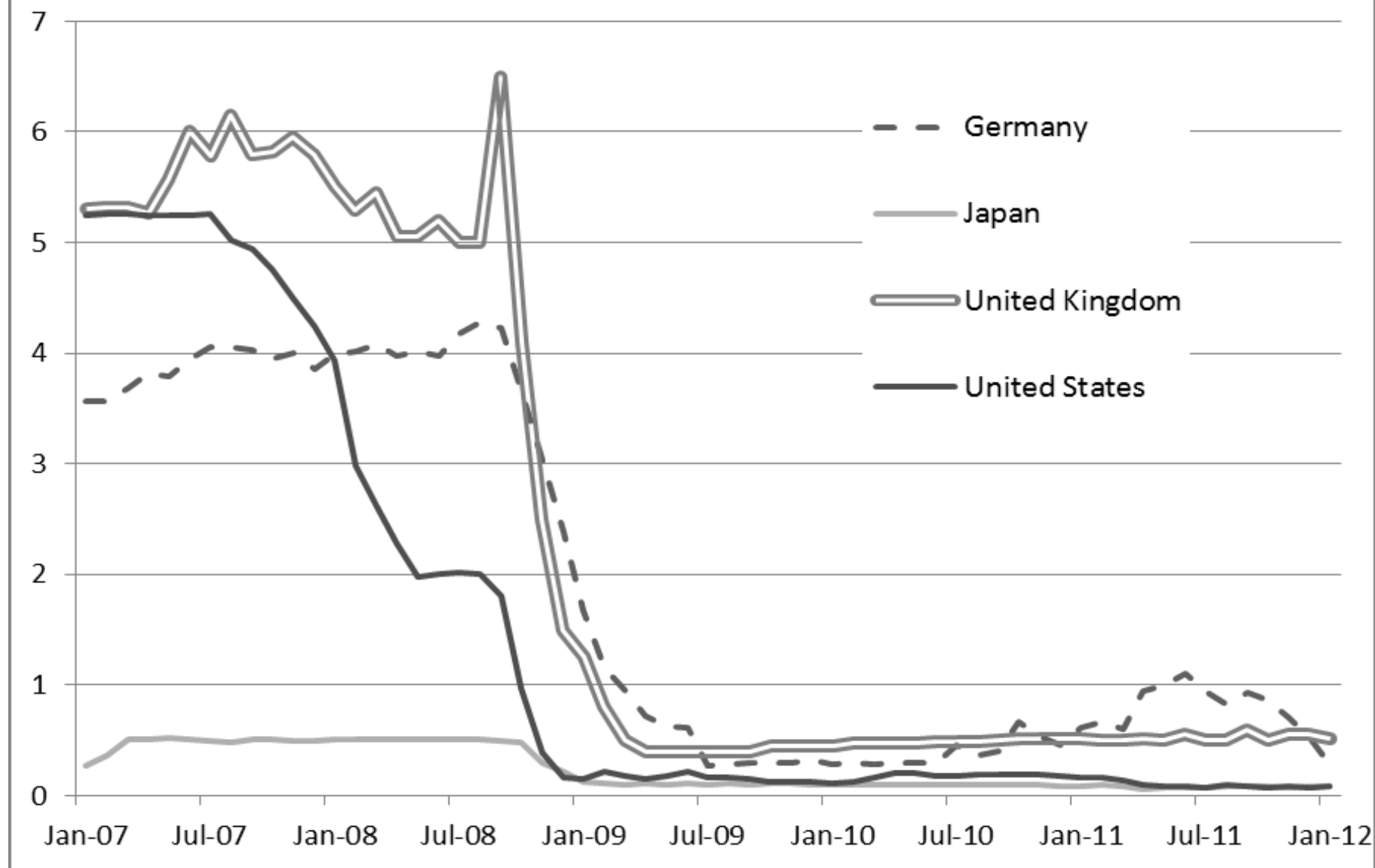
Source: OECD; CEIC; national data; authors' own estimates.

# 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.

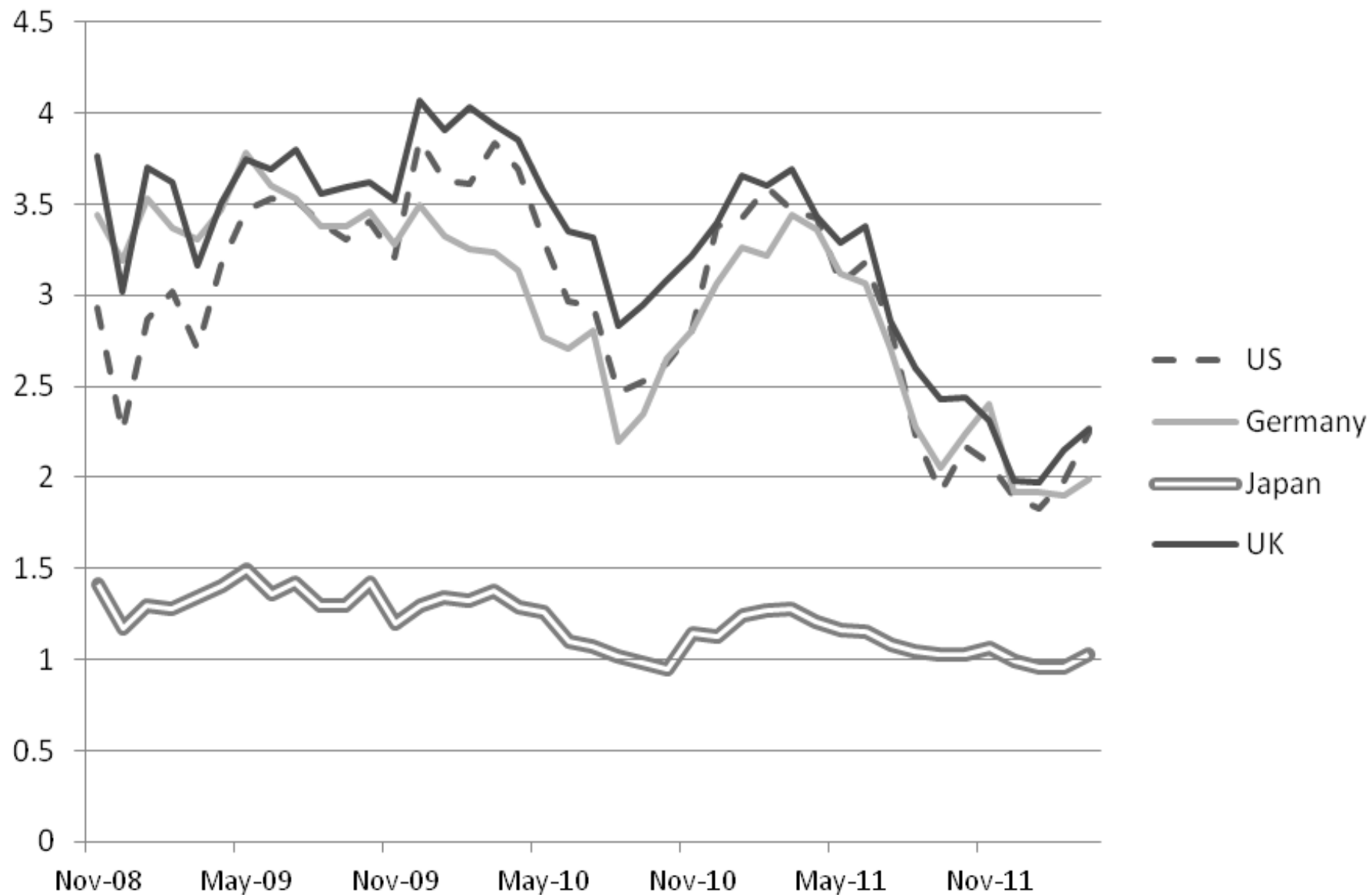


## Post Crisis Money Market Interest Rate of the Developed World



Source: Global Financial Data

**Figure 5.2 10 Year Government Bond Rate of Selected Countries  
(Nov-08 to Mar-12)**

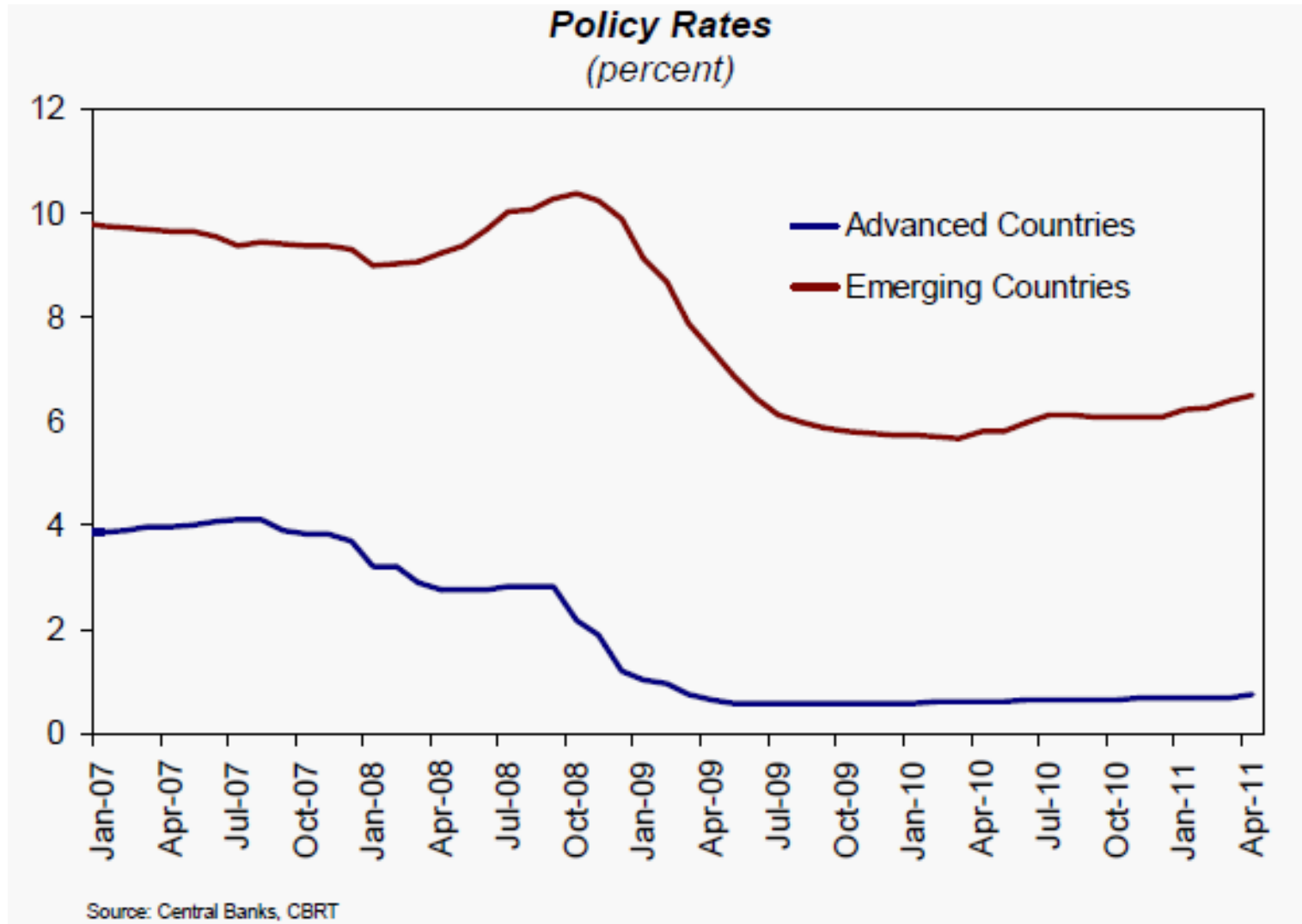


Source: IMF

# Interest Rate Structure, China and US

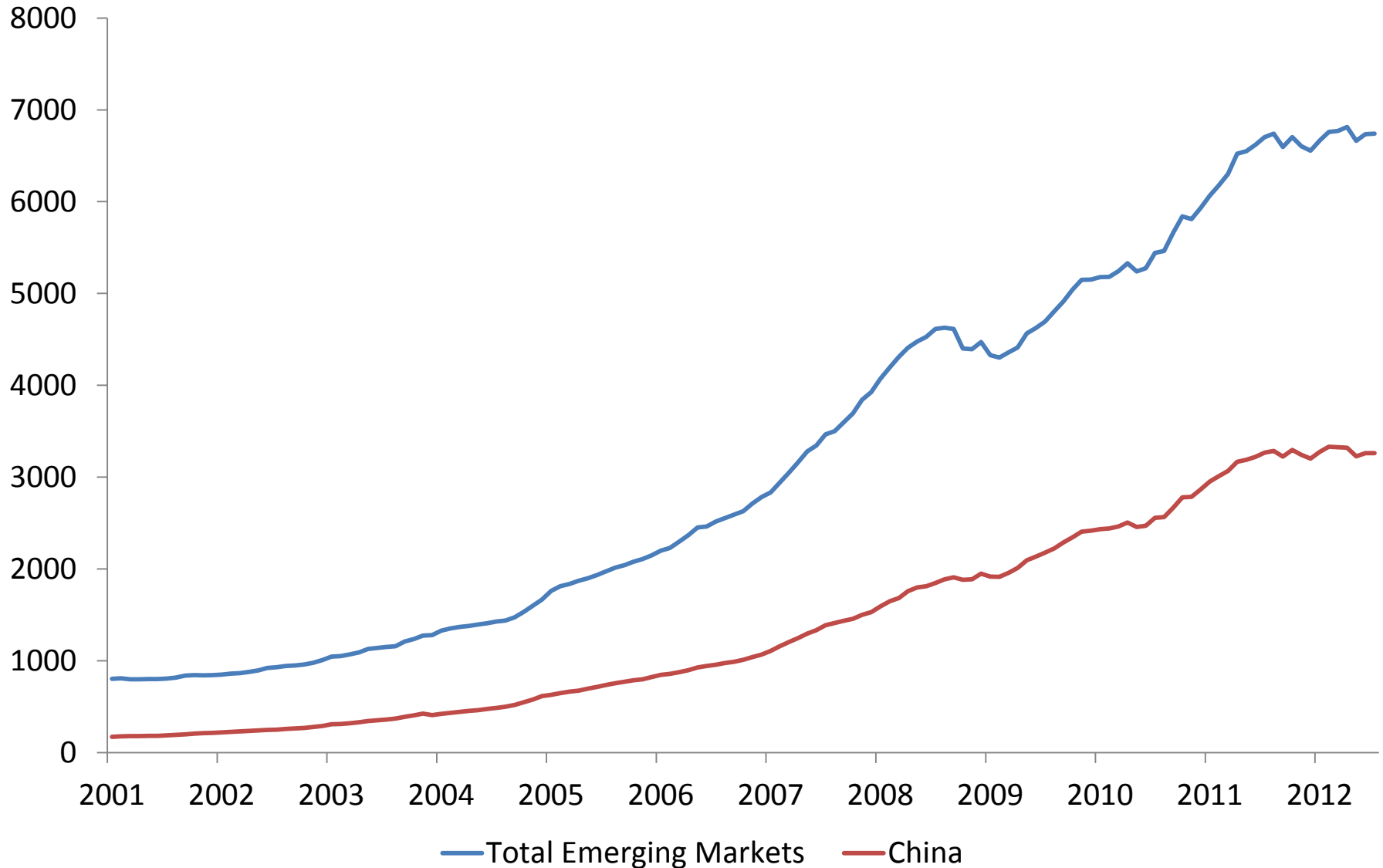
	China				United States			
	Deposit Rate	Lending Rate	Interbank Overnight	GDP Growth	Deposit Rate	Lending Rate	Federal Funds Rate	GDP Growth
2000	2.25	5.85		8.37	6.65	9.23	6.24	6.39
2001	2.25	5.58		10.41	3.73	6.92	3.89	3.36
2002	1.98	5.31	2.4	10.50	1.88	4.67	1.67	3.46
2003	1.98	5.31	2.18	13.41	1.23	4.12	1.13	4.70
2004	2.25	5.58	2.01	17.69	1.79	4.34	1.35	6.51
2005	2.25	5.58	2.01	16.38	3.76	6.19	3.21	6.49
2006	2.52	6.12	1.31	18.76	5.27	7.96	4.96	6.02
2007	4.14	7.47	1.97	19.62	5.25	8.05	5.02	4.95
2008	2.25	5.31	2.21	18.46	3.05	5.09	1.93	2.19
2009	2.25	5.31	0.83	9.57	1.12	3.25	0.16	-1.74
2010	2.5	5.56	2.24	12.88	0.518	3.25	0.17	3.57

Source: IMF.



Source: Mehmet Yörükoğlu

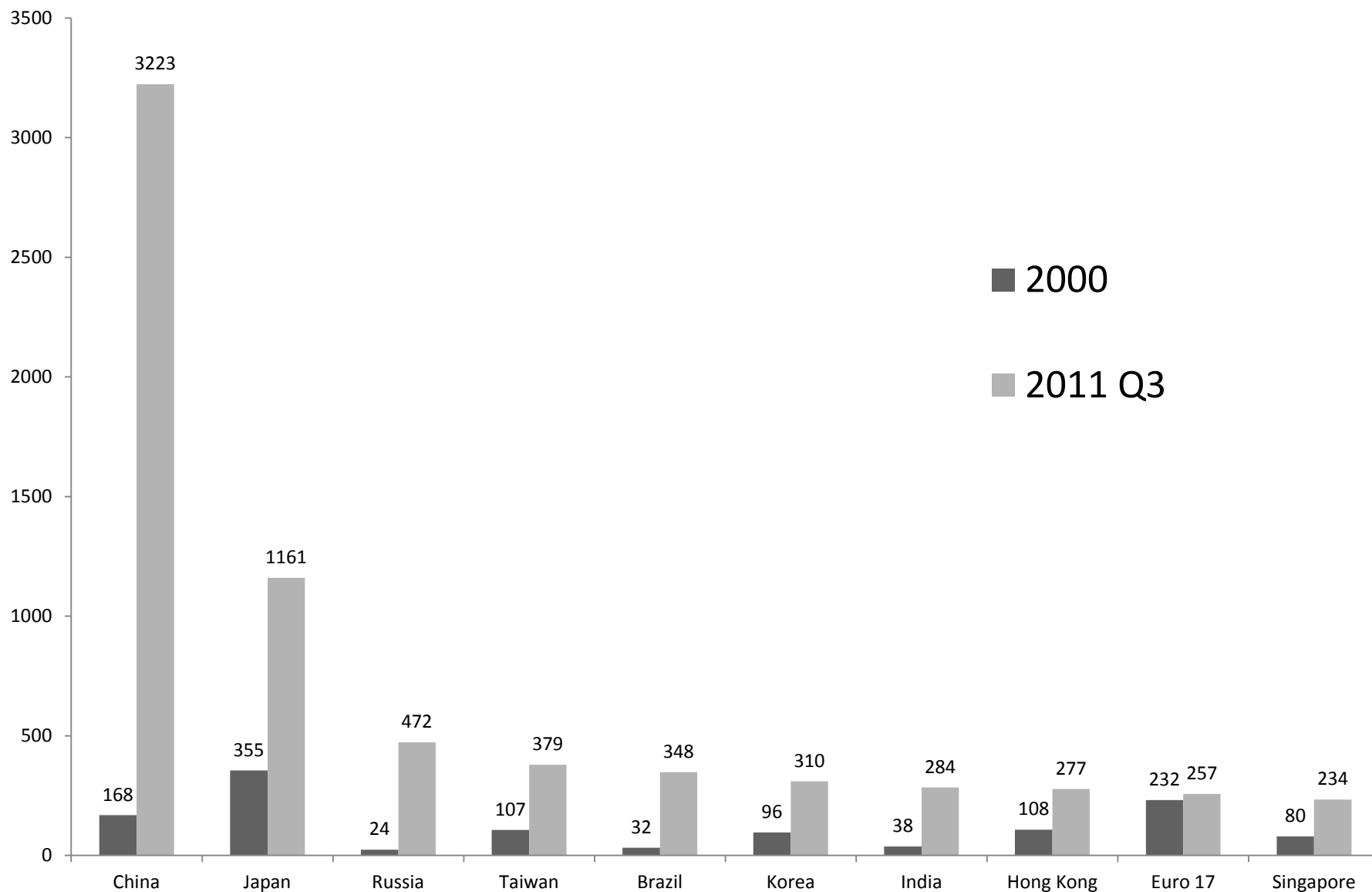
# Emerging Markets and China, Foreign Exchange Reserves (Billion USD)



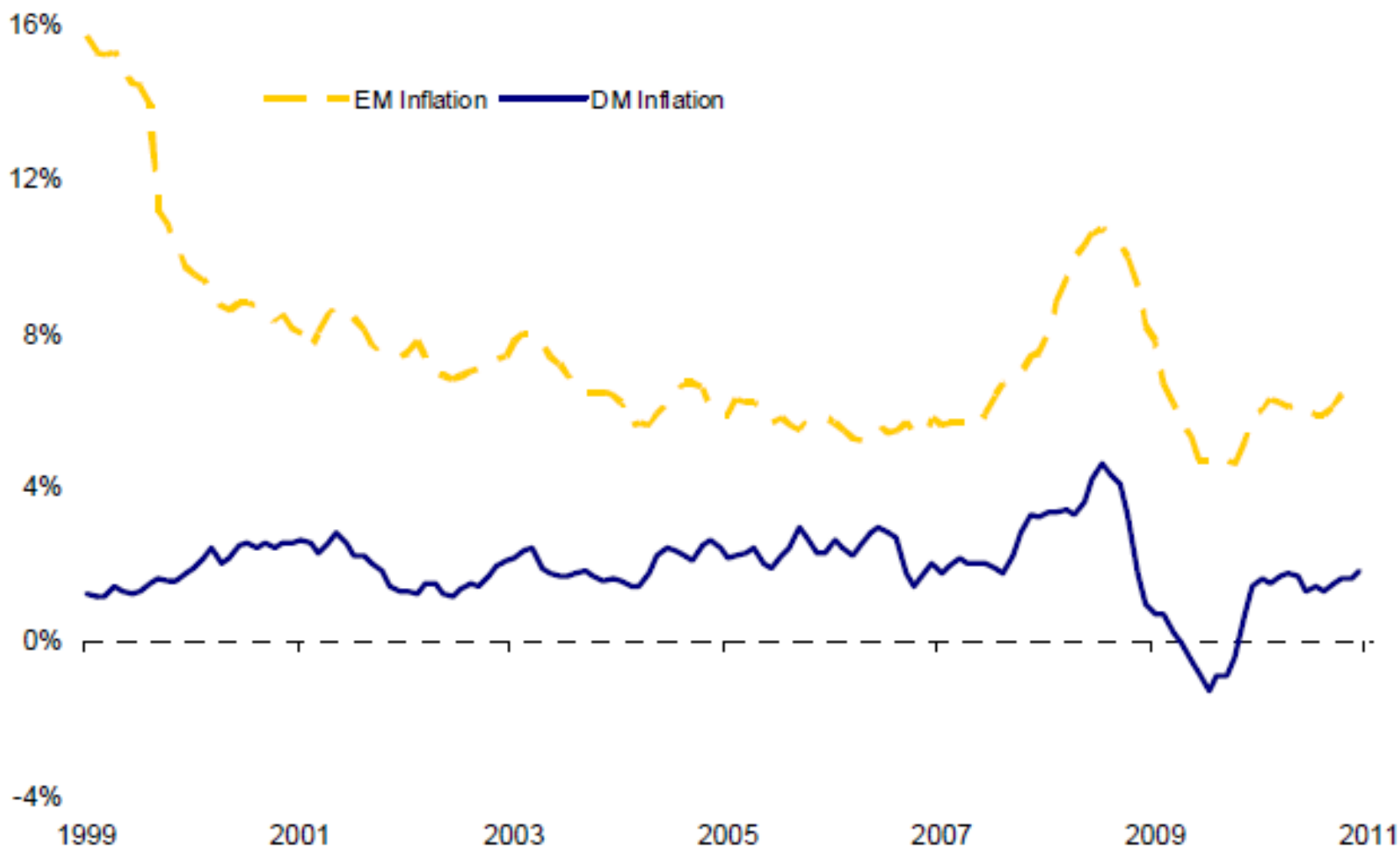
Source: IFS

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)



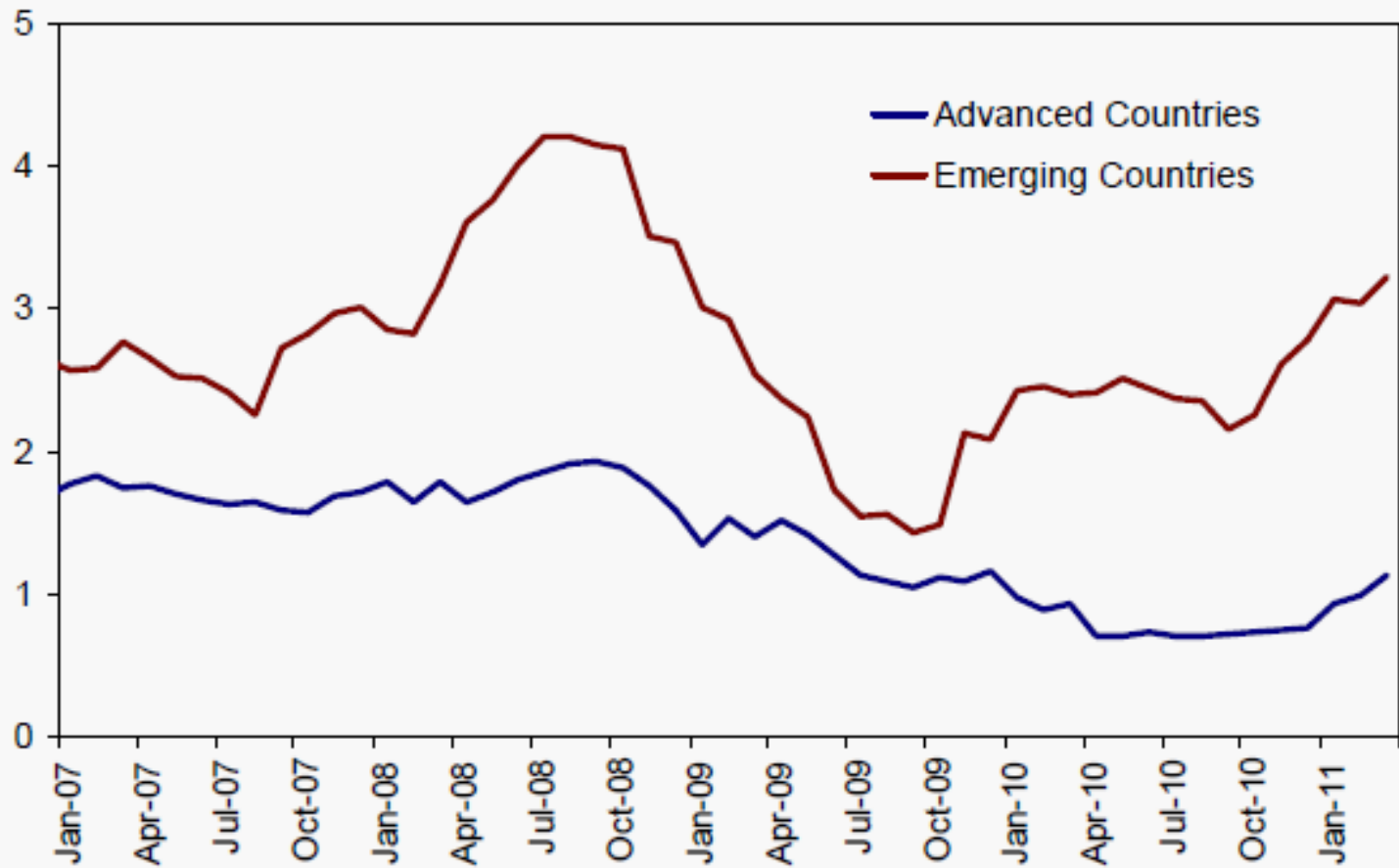
## Emerging Markets (EM) and Developed Markets (DM) Inflations



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)

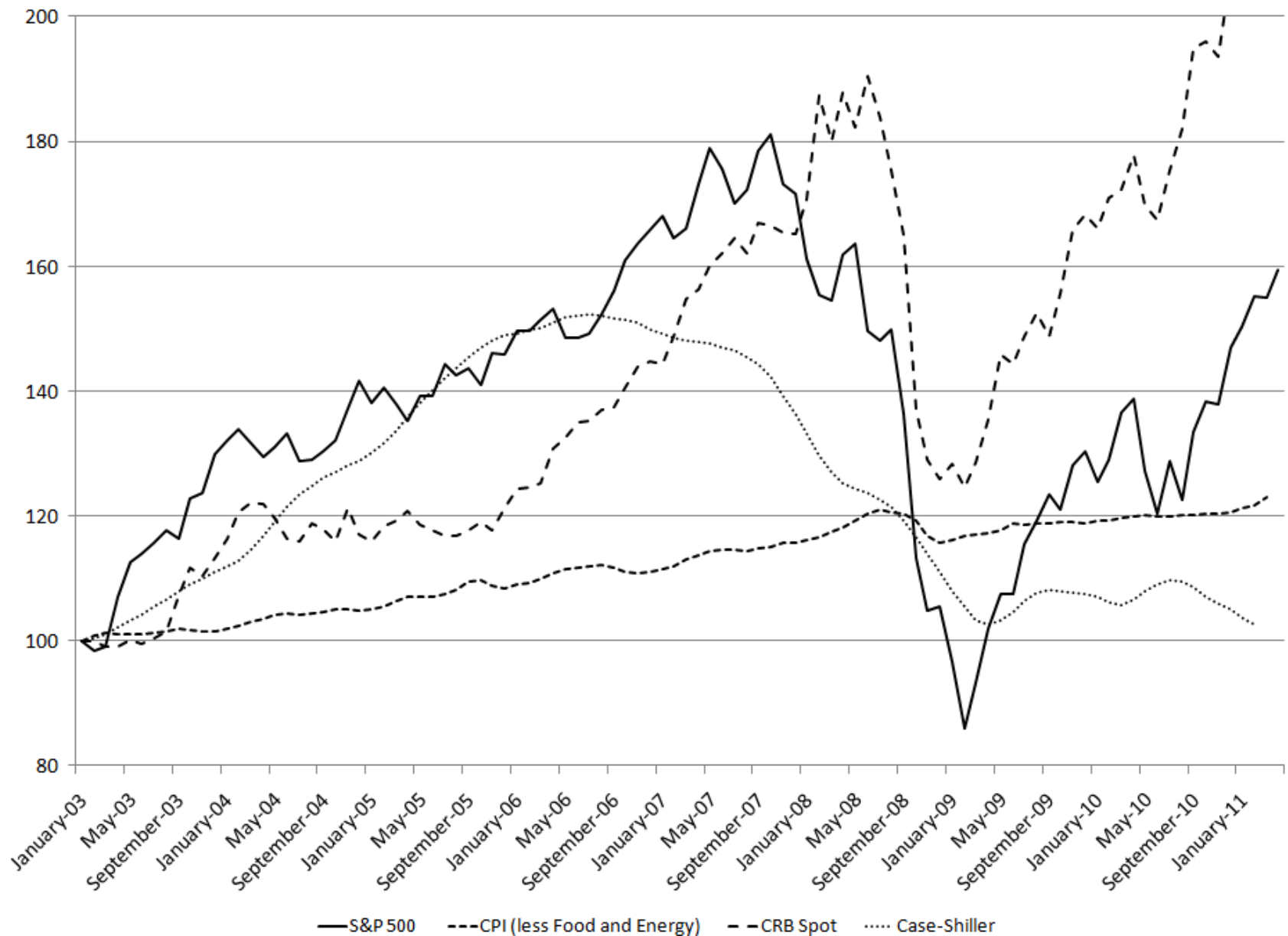


Source: Bloomberg, CBRT

Source: Mehmet Yörükoğlu

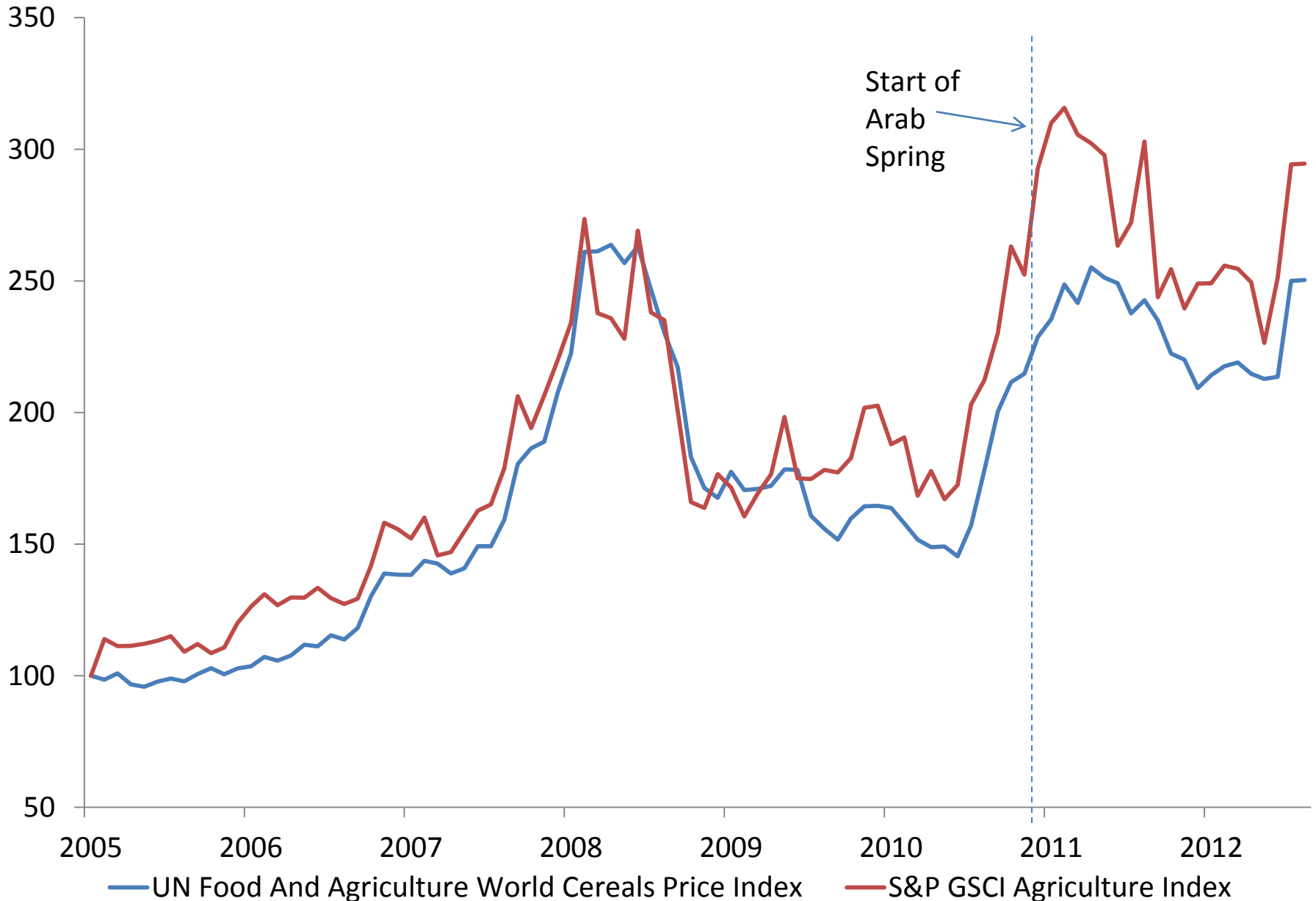


# Figure 4: The Greenspan-Bernanke Bubble Economy



Source: Bloomberg and Federal Reserve Economic Data

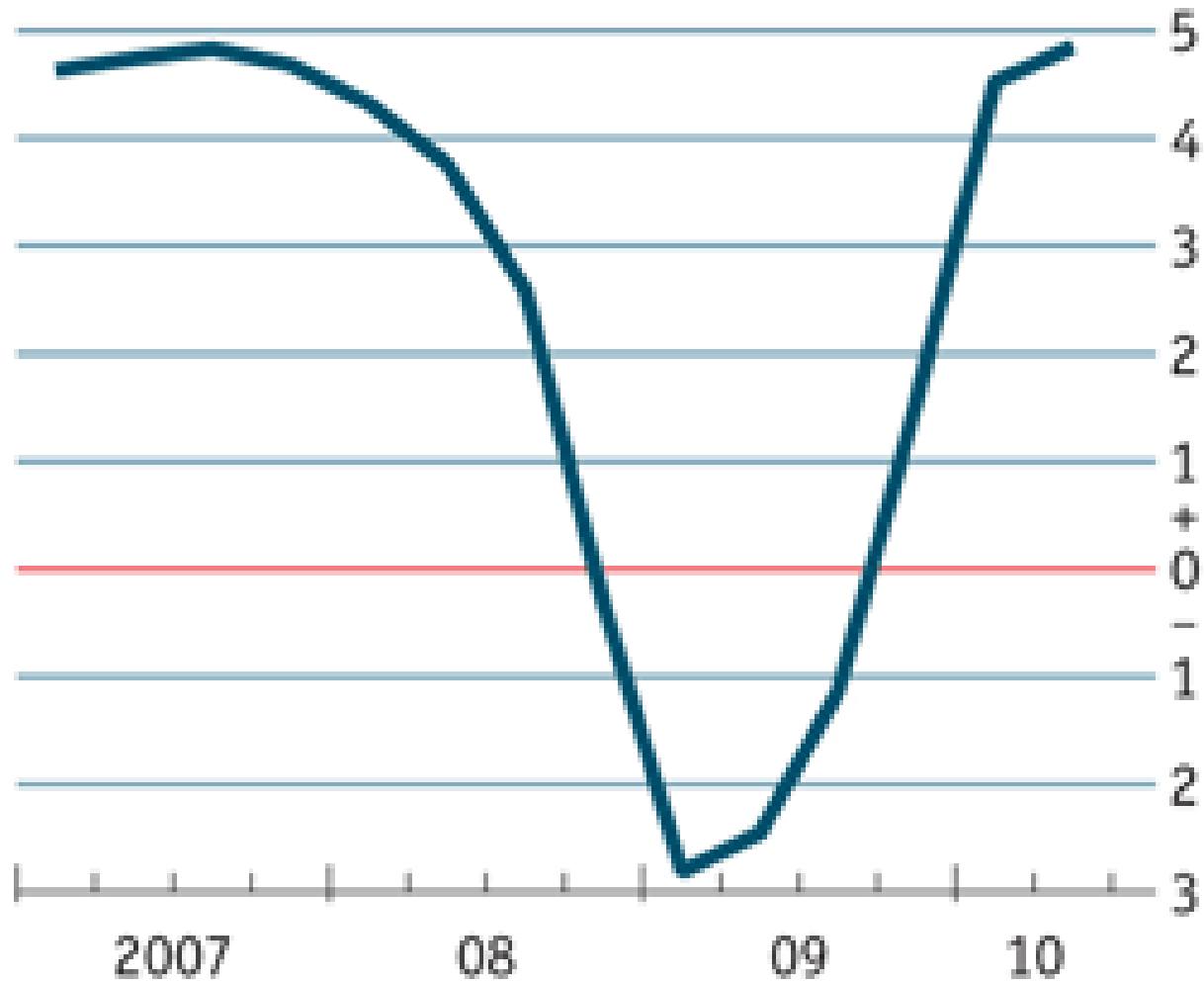
## Food/Agriculture Product Price (2005=100)



Source: Bloomberg

Figure 4: World GDP\*

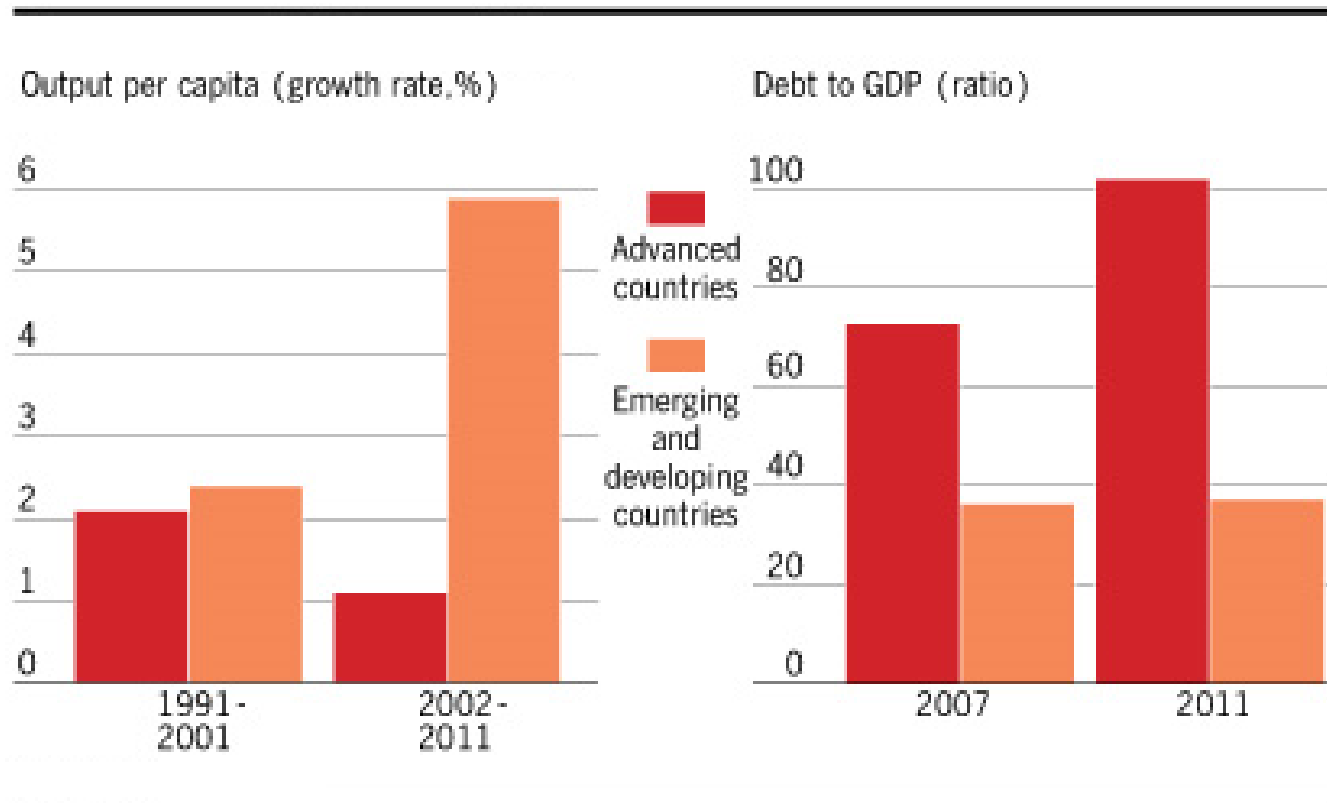
% change on a year earlier



Source: The Economist (Oct 30-Nov 5 2010)

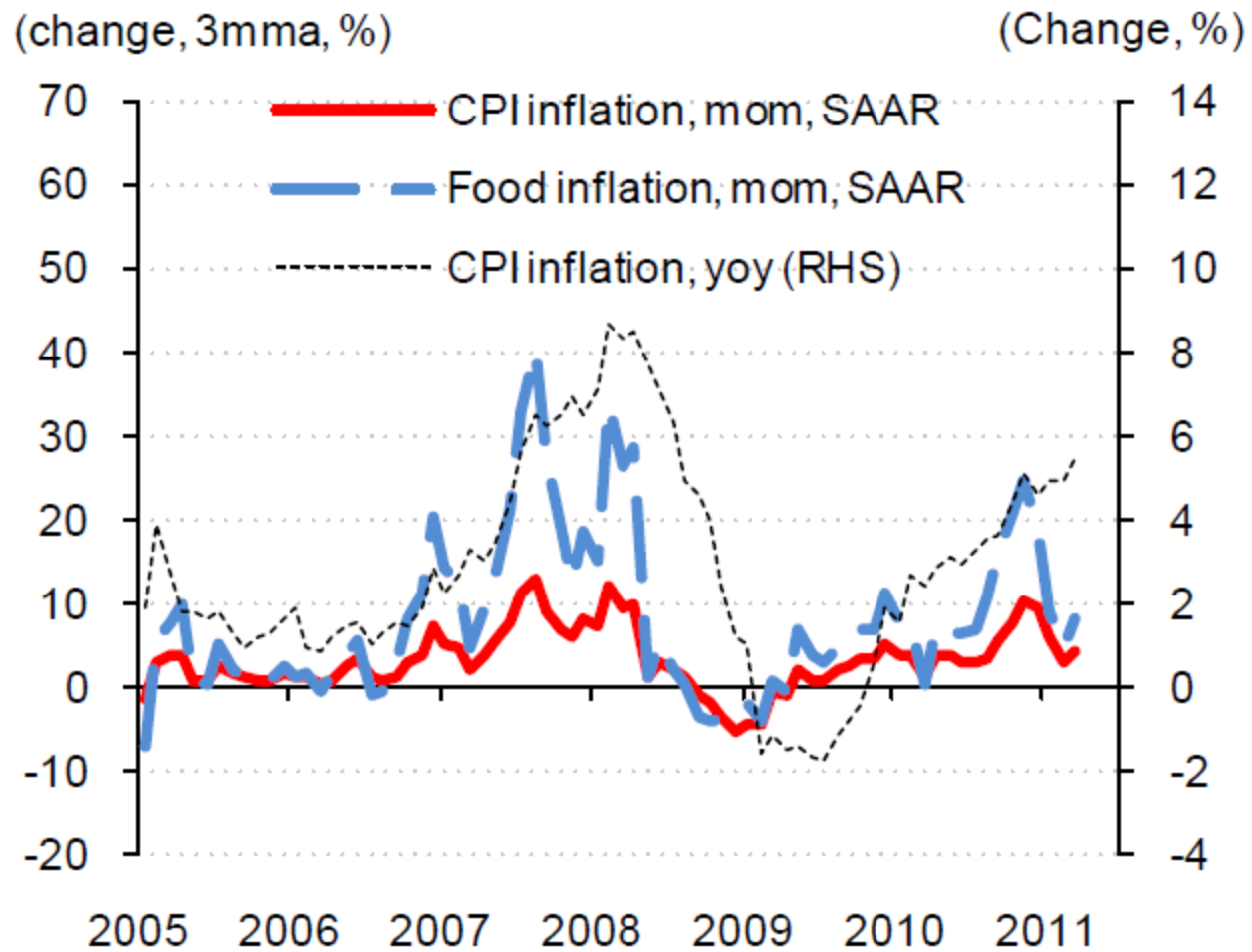
\*Estimates based on 52 countries representing 90% of world GDP. Weighted by GDP at purchasing power parity

**Figure 5: Two Speed Recovery**



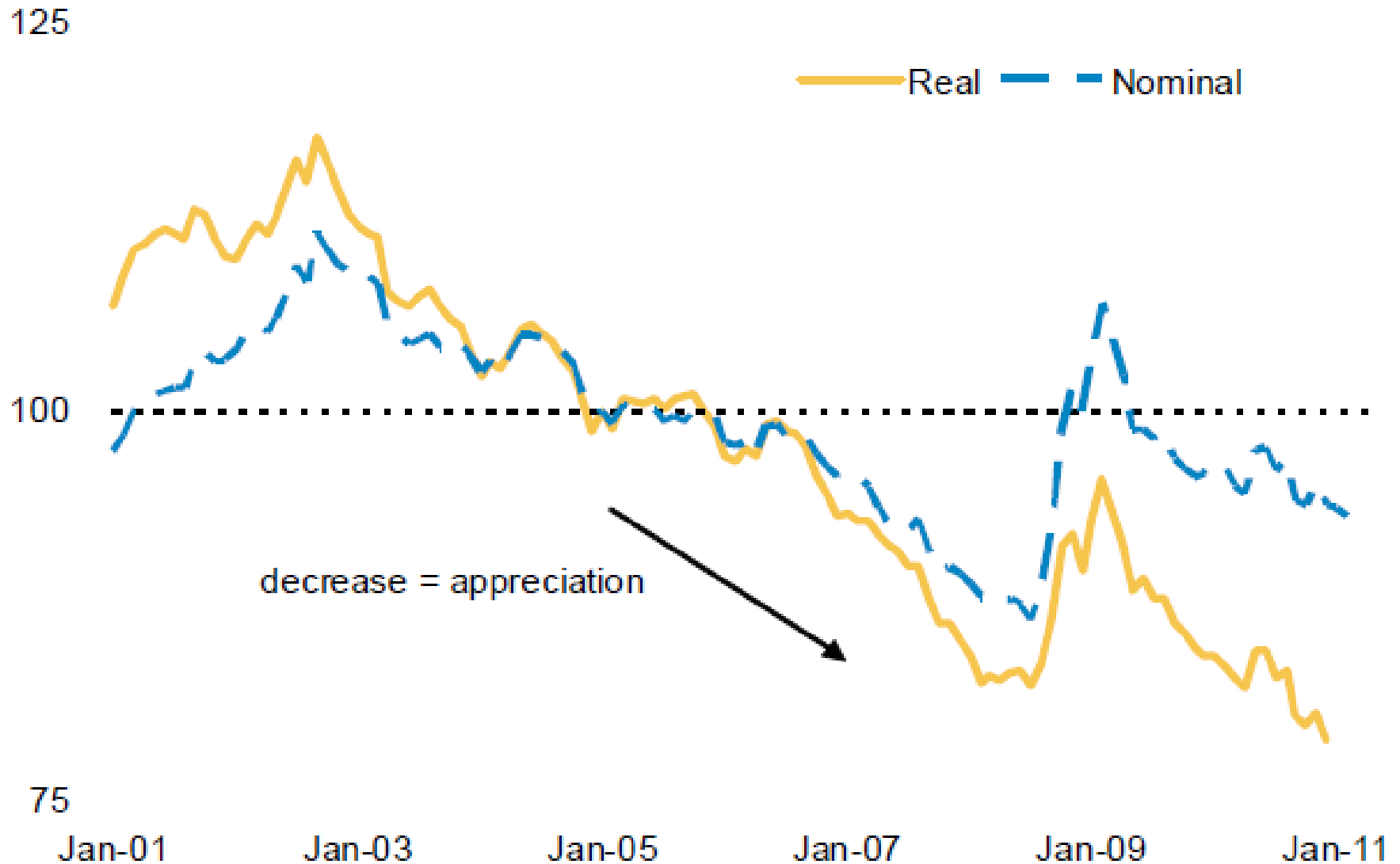
Source: Financial Times (November 12, 2010)

## China's Inflation



Source: World Bank

## EM Real and Nominal Exchange Rate Appreciation, Jan'05 = 100



Source: Haver Analytics, Morgan Stanley Research

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

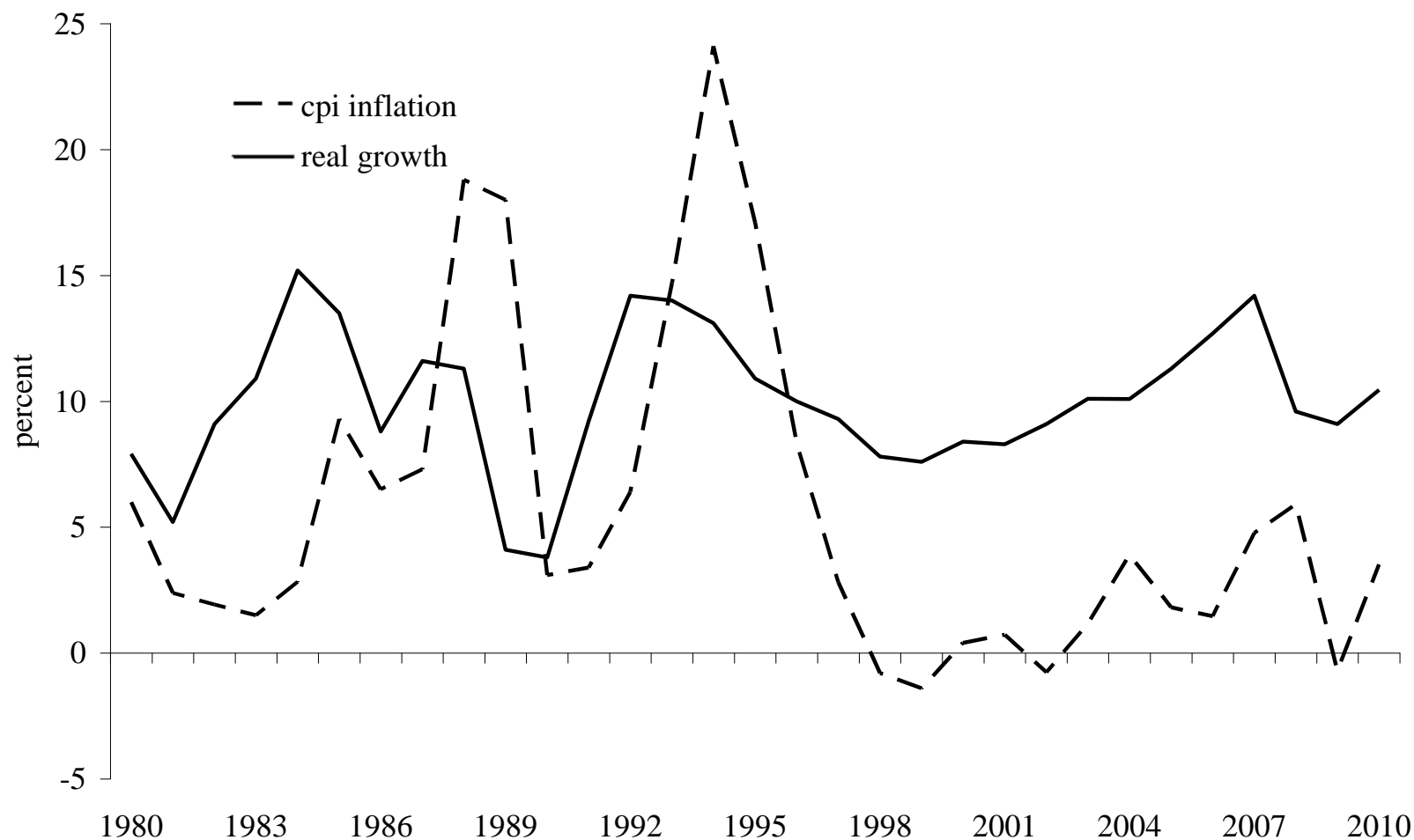
# China and Its Dollar Exchange Rate

## A Worldwide Economic Stabilizer?

- China's Economy
- The East Asian Economy
- The World Economy

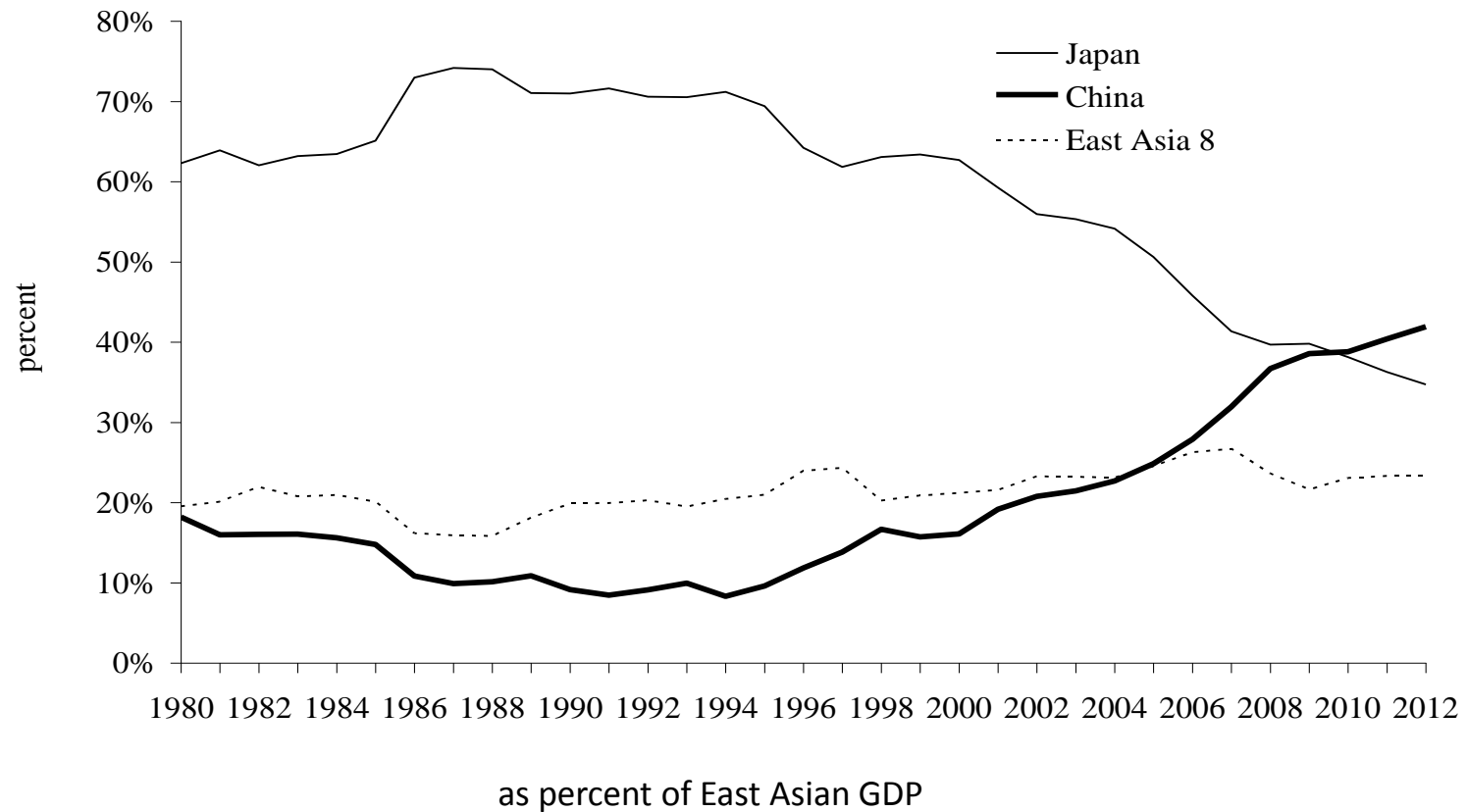


# Real GDP Growth and Consumer Price Inflation, China, 1980-2010



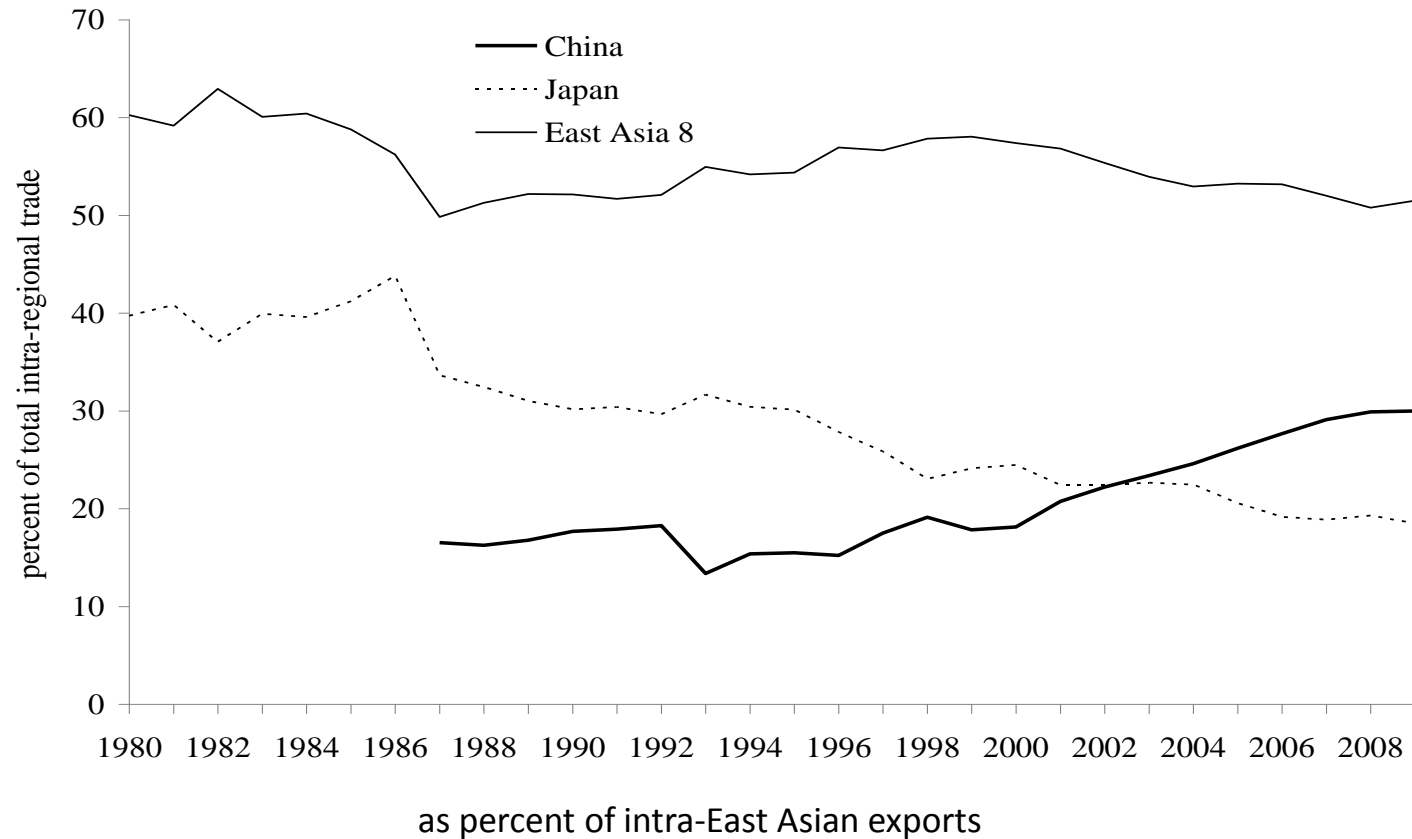
Source: IMF.

# Economic Weights in East Asia (1)



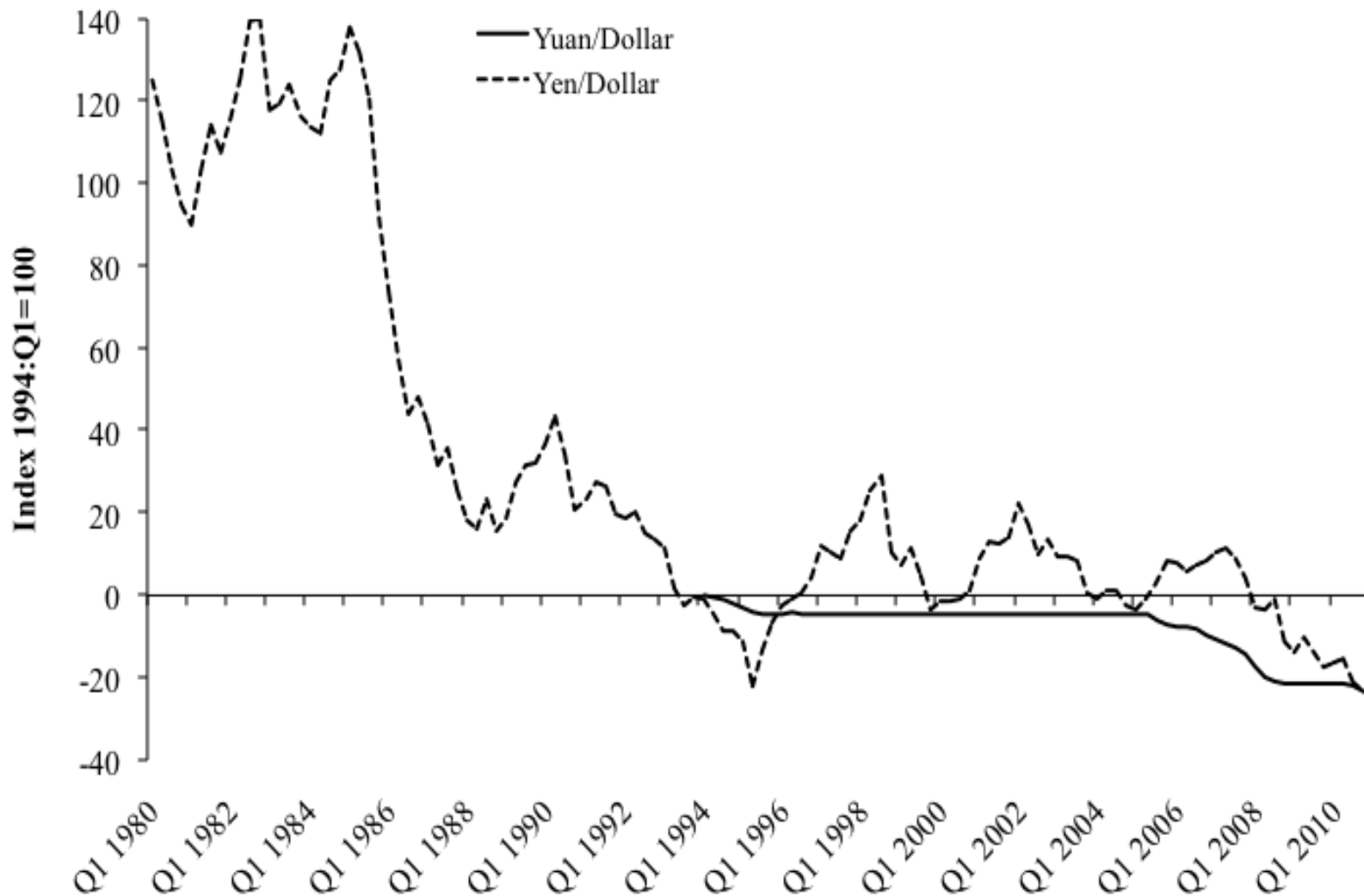
Source: IMF.

# Economic Weights in East Asia (2)



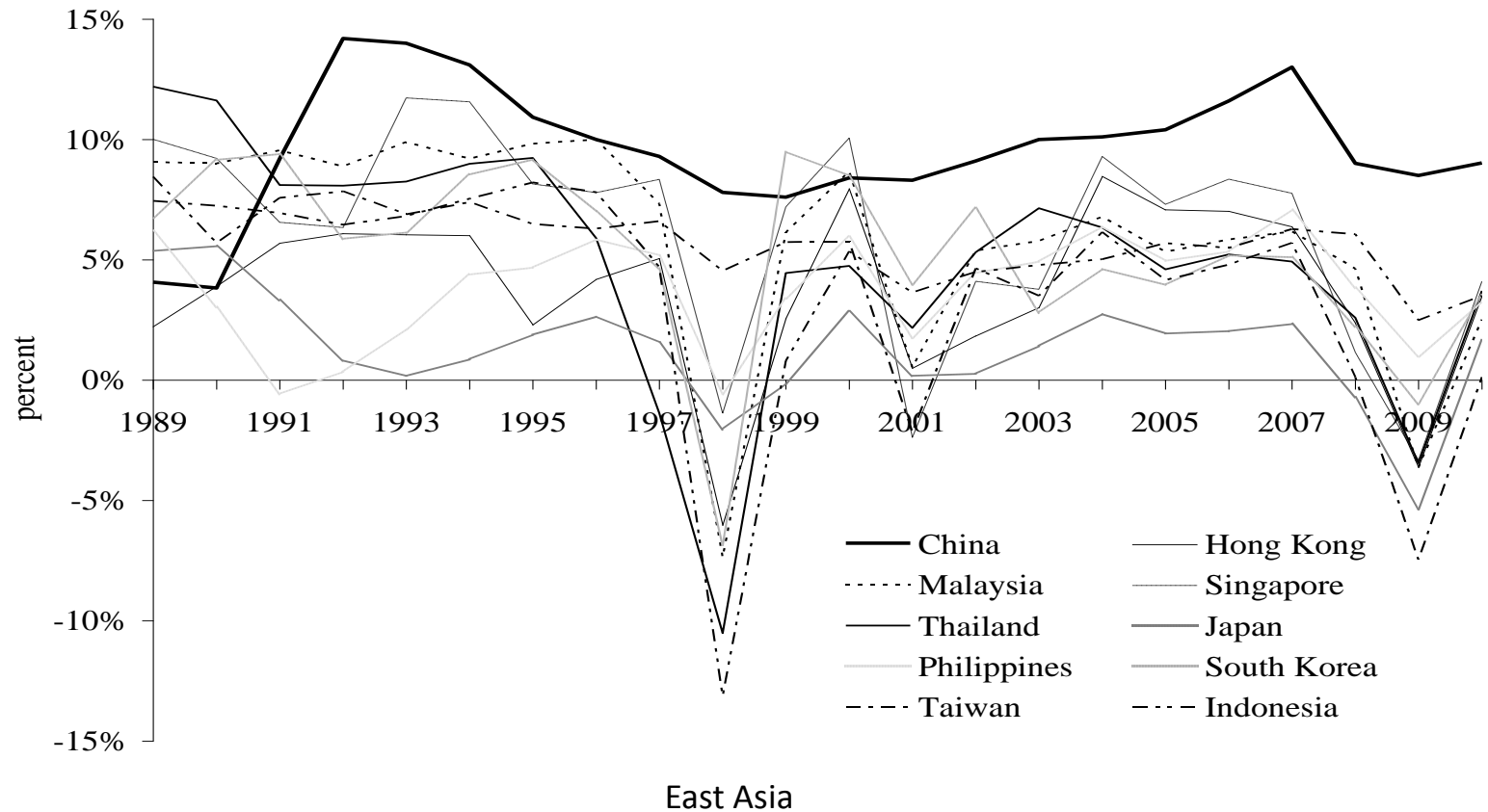
Source: IMF.

## Yen and Yuan against the Dollar



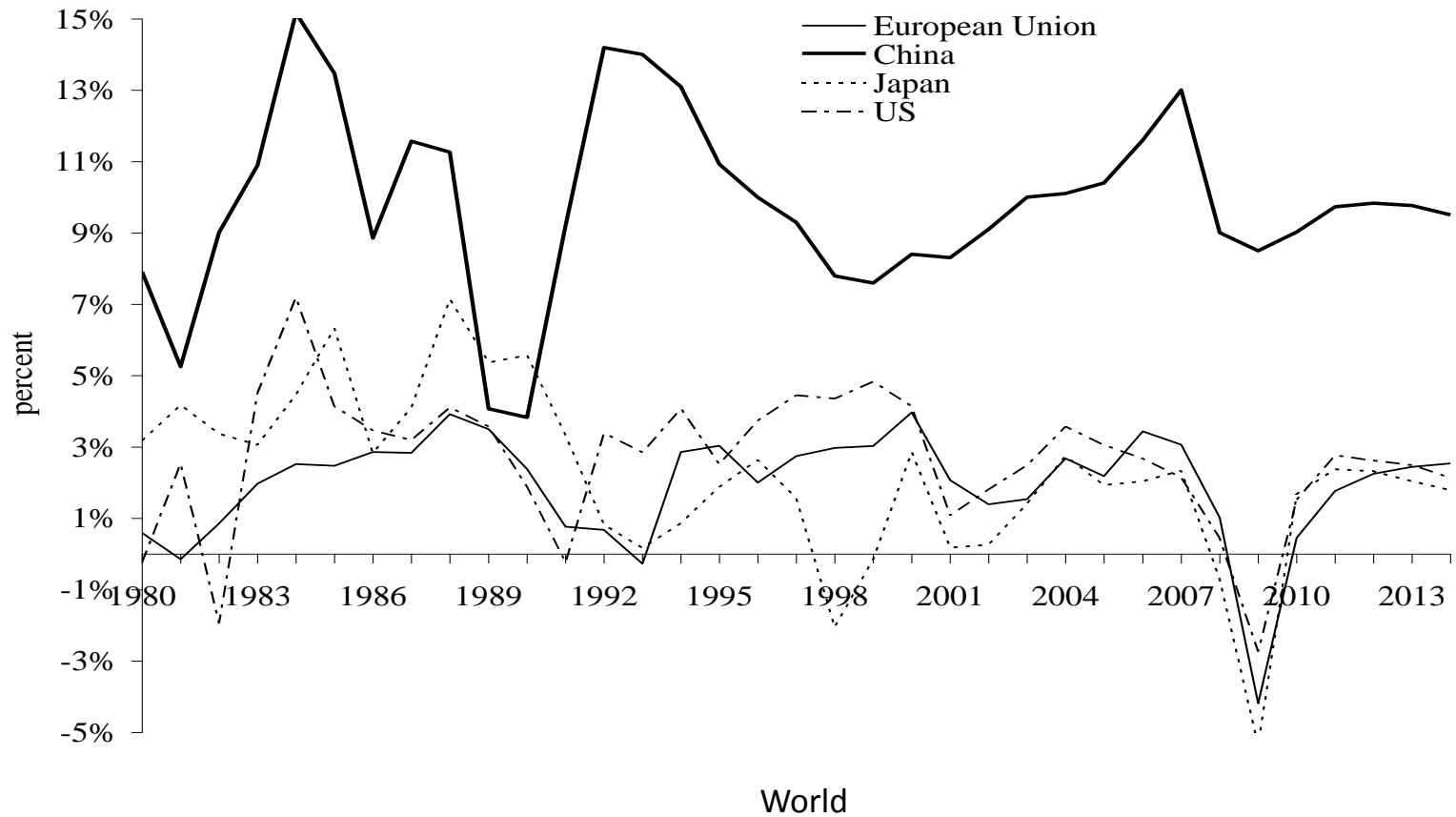
Source: Datastream

# Real Growth in East Asia



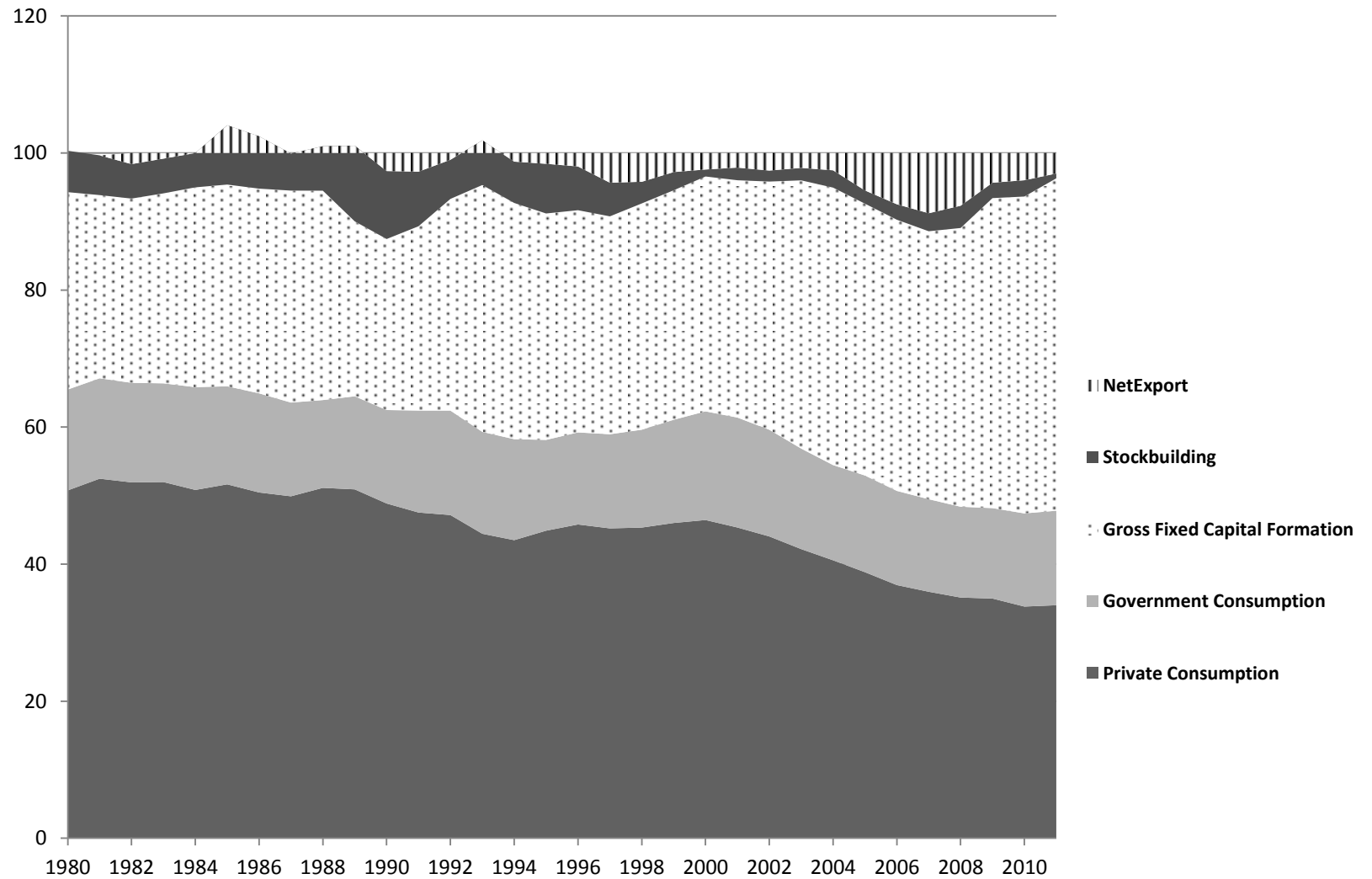
Source: IMF.

# Global Growth Performance



Source: IMF.

**China GDP Composition, 1980-2011**



# 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