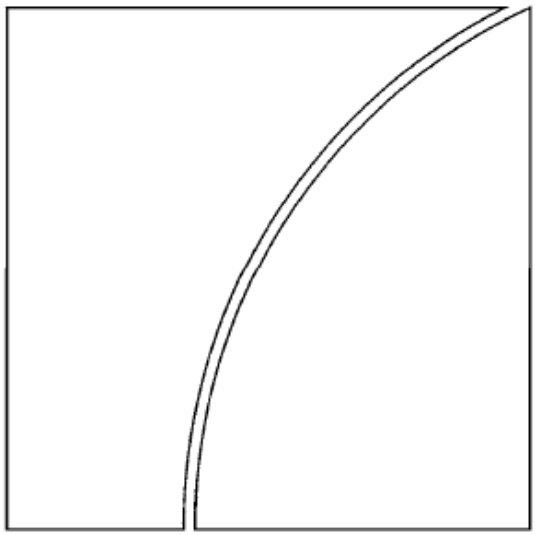
EE 459 : Seminar in International Economics

Financial Global Imbalance

BANK FOR INTERNATIONAL SETTLEMENTS



BIS Working Papers
No 346

Global imbalances and the financial crisis: Link or no link?

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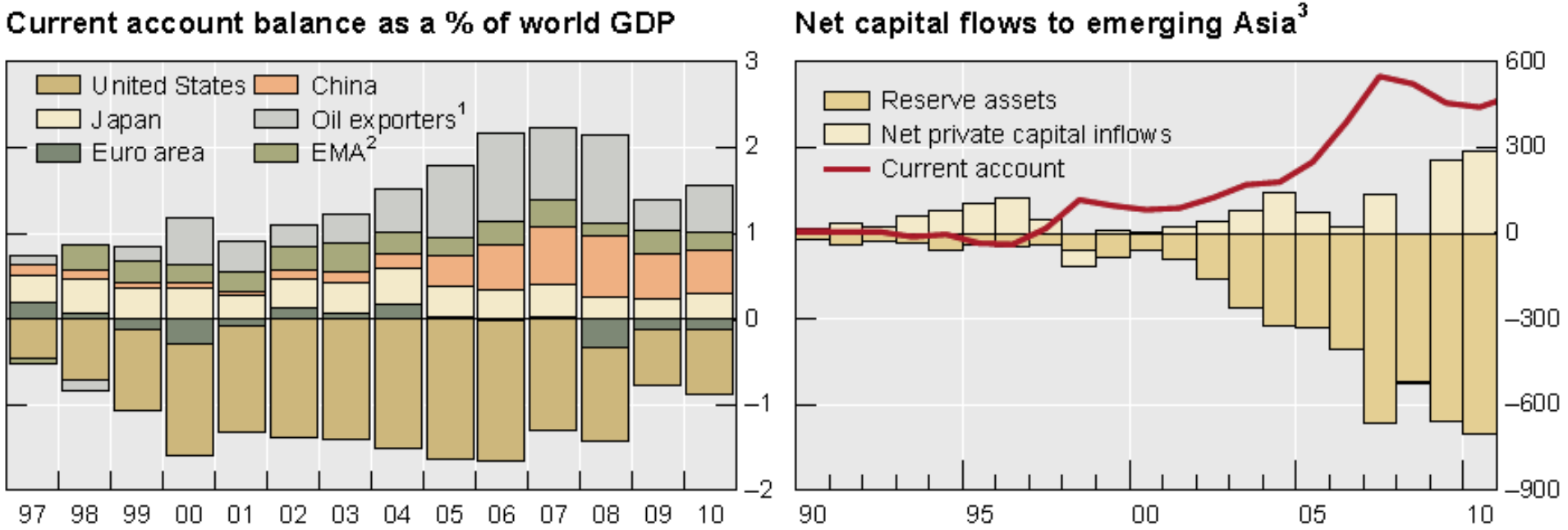
Monetary and Economic Department

May 2011

Graph 1

Current account balance and net capital flows

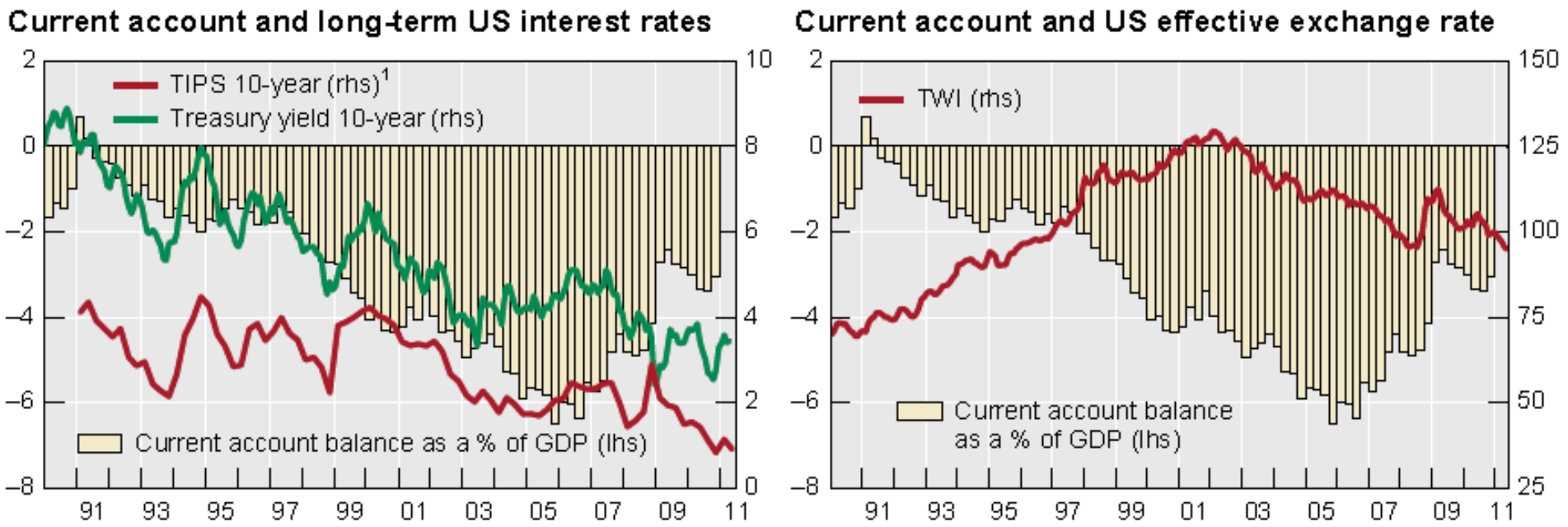


[1] Algeria, Angola, Azerbaijan, Bahrain, Democratic Republic of Congo, Ecuador, Equatorial Guinea, Gabon, Iran, Kazakhstan, Kuwait, Libya, Nigeria, Norway, Oman, Qatar, Russia, Saudi Arabia, Sudan, Syrian Arabic Republic, Trinidad and Tobago, United Arab Emirates, Venezuela and Yemen. [2] Chinese Taipei, India, Indonesia, Korea, Malaysia, Philippines, Singapore and Thailand. [3] EMA countries and China; in billions of US dollars.

Sources: IMF; authors' calculations.

Graph 2

US current account and financial variables



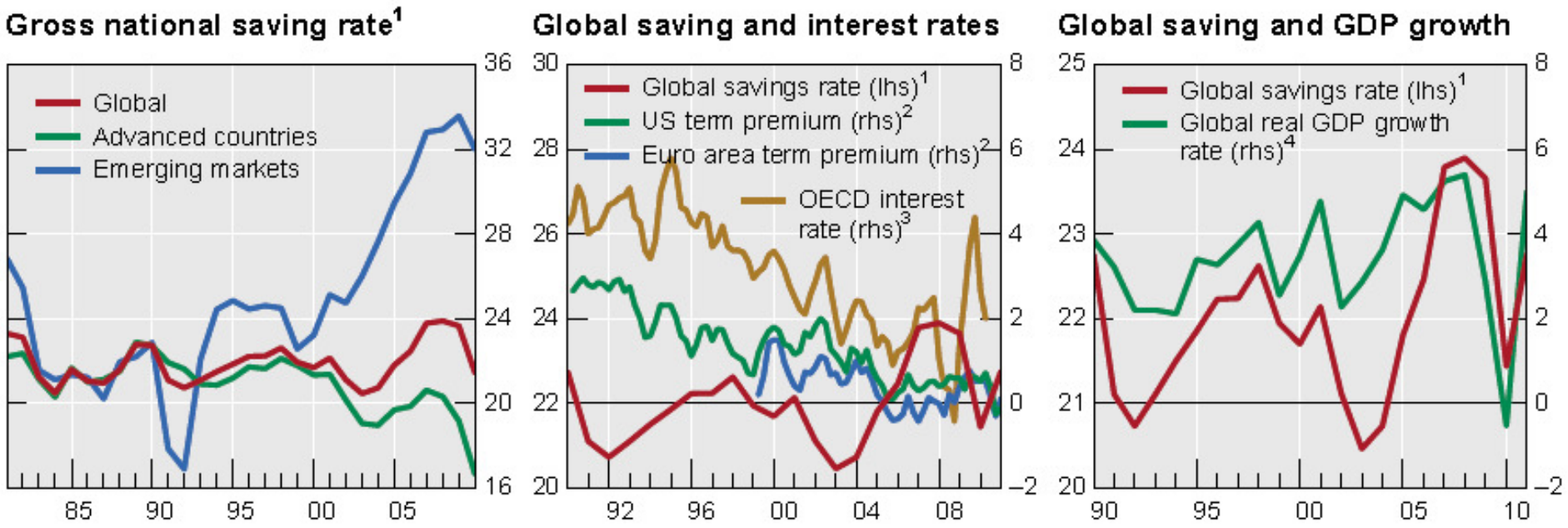
[1] 10-year nominal govemment yield minus inflation expectations until end-1996.

Sources: Bloomberg; IMF; authors' calculations.

Graph 3

Global savings rate, GDP growth and interest rates

In per cent



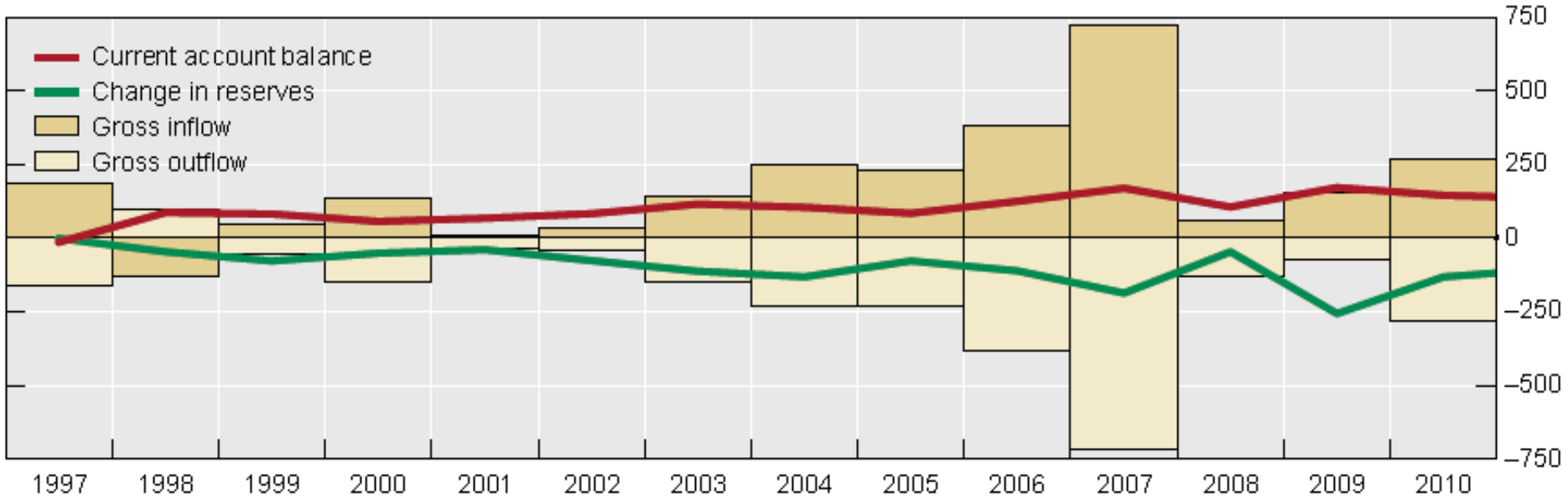
[1] As a percentage of GDP. [2] Nominal 10-year term premia based on zero-coupon real and nominal yields calculated based on estimates from a modified version of the term structure model in P Hördahl and O Tristani, "Inflation risk premia in the term structure of interest rates", BIS Working Papers, no 228, May 2007. [3] 2005 GDP PPP-weighted average of real long-term (mainly 10-year) interest rates for Australia, Canada, Denmark, the euro area, Japan, New Zealand, Norway, Switzerland, the United Kingdom and the United States. [4] Year-on-year growth rates.

Sources: IMF; OECD; authors' calculations.

Graph 4

Emerging Asia gross capital flows

In billions of US dollars

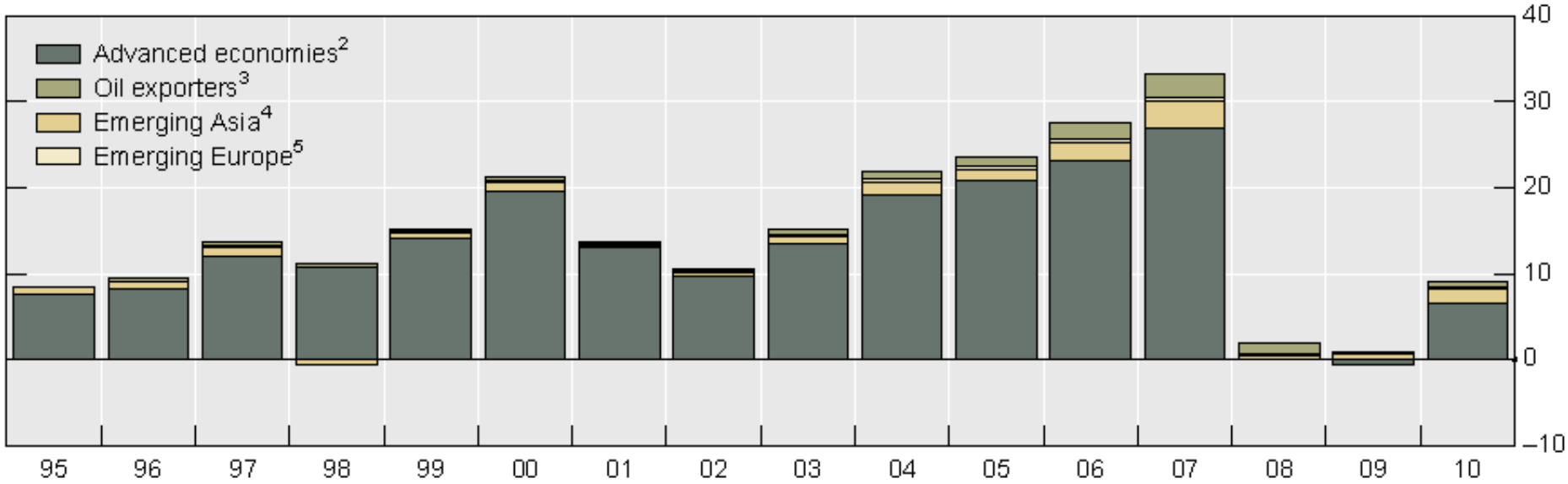


Note: Emerging Asia comprises Chinese Taipei, Hong Kong SAR, India, Indonesia, Korea, Malaysia, the Philippines, Singapore and Thailand.

Source: IMF World Economic Outlook.

Graph 5

Gross Capital flows[1] as a percentage of World GDP



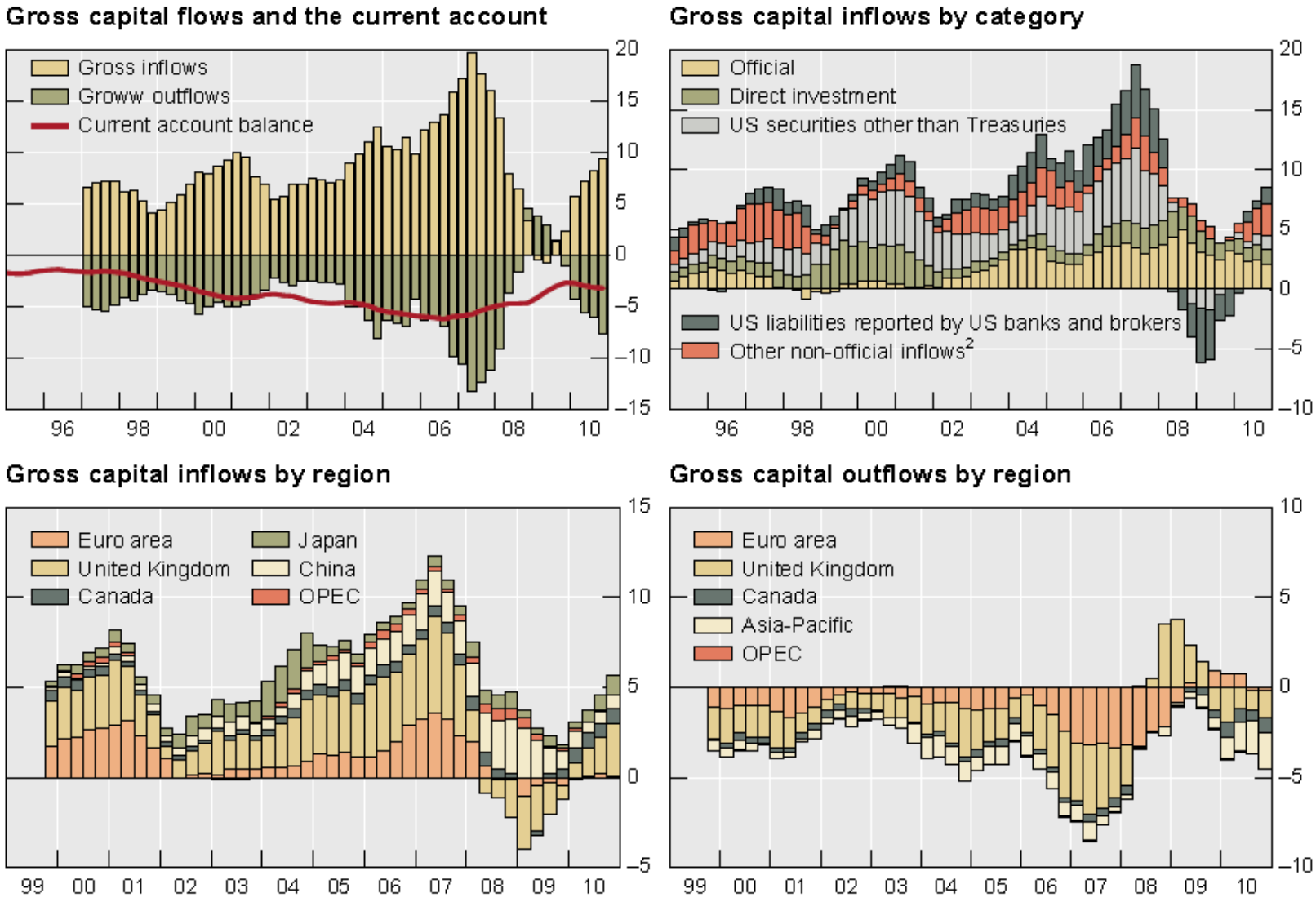
[1] Gross flows equals sum of inflows and outflows of direct, portfolio and other investments. [2] Australia, Canada, Denmark, the euro area, Japan, New Zealand, Sweden, the United Kingdom and the United States. [3] Algeria, Angola, Azerbaijan, Bahrain, Democratic Republic of Congo, Ecuador, Equatorial Guinea, Gabon, Iran, Kazakhstan, Kuwait, Libya, Nigeria, Norway, Oman, Qatar, Russia, Saudi Arabia, Sudan, Syrian Arabic Republic, Trinidad and Tobago, the United Arab Emirates, Venezuela and Yemen. [4] China, Chinese Taipei, India, Indonesia, Korea, Malaysia, the Philippines, Singapore, Thailand and the 20 smaller Asian countries. [5] Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia.

Sources: IMF; authors' calculations.

Graph 6

US balance of payments[1]

As a percentage of US GDP



[1] 4-quarter moving average. [2] Sum of US Treasury securities, foreign assets in US dollar and US liabilities to unaffiliated foreigners.

Sources: Bureau of Economic Analysis; authors' calculations.

Table 1

Foreign holdings of US securities, in billions of US dollars[1]

	2002	2003	2004	2005	2006	2007	2008	2009
Europe	1,738	1,989	2,531	2,880	3,231	4,203	4,215	3,632
of which								
Euro currency countries	973	1,174	1,496	1,676	1,881	2,370	2,398	1,983
United Kingdom	368	390	491	560	640	921	864	788
Asia	1,269	1,574	2,008	2,358	2,686	3,143	3,607	3,976
of which								
China	181	255	341	527	699	922	1,205	1,464
Japan	637	771	1,019	1,091	1,106	1,197	1,250	1,269
Americas	703	898	1,105	1,258	1,454	1,964	2,075	1696
of which								
Caribbean financial centers	365	502	661	769	835	1,156	1,204	985
Others	628	517	375	368	406	461	424	336
Total	4,338	4,978	6,019	6,864	7,777	9,771	10,322	9,641

[1] Foreign holdings of US long-term and short-term securities

Source: US Treasury.

Graph 7

Size and structure of banks' foreign operations: nationality basis

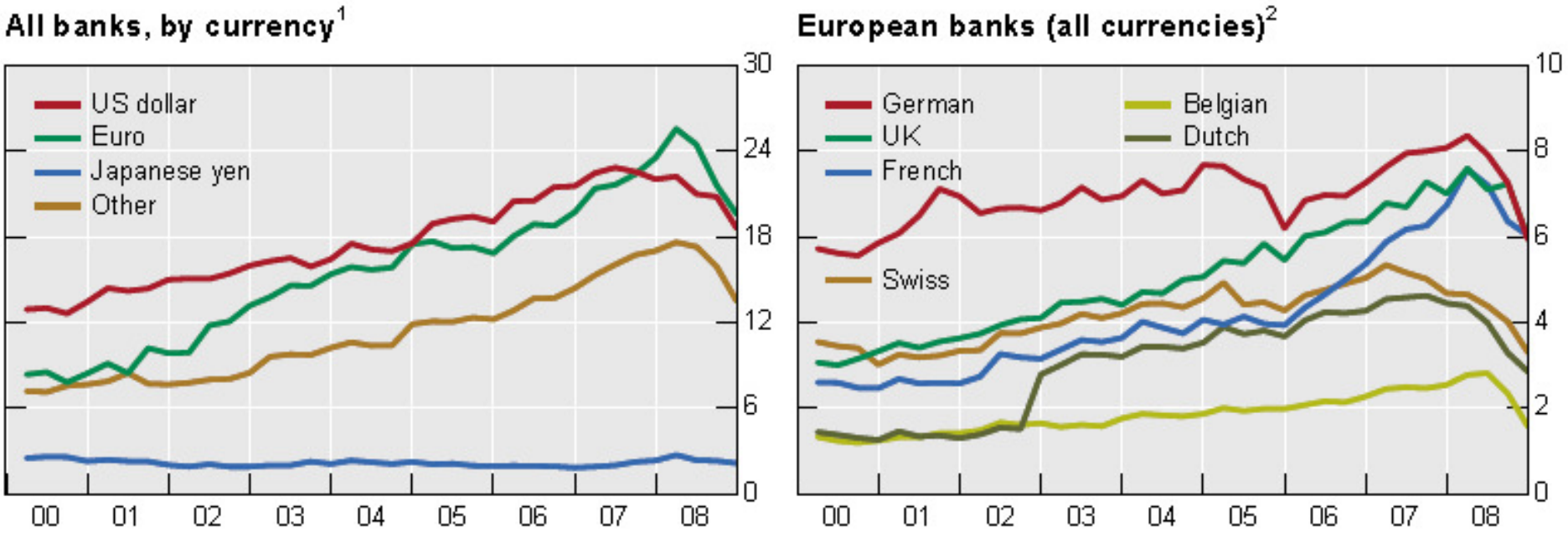
Positions at end-2007

[1] Total assets (including "strictly domestic assets") aggregated across BIS reporting banks. For reporting jurisdictions which do not provide this aggregate (DE, ES, FR, IT, JP), total assets are estimated by aggregating the worldwide consolidated balance sheets (from BankScope) for a similar set of large banks headquartered in the country; in trillions of US dollars. [2] Foreign claims as reported in the BIS consolidated banking statistics (immediate borrower basis) plus foreign currency claims vis-à-vis residents of the home country booked by home offices (taken from the BIS locational banking statistics by nationality); excludes inter-office claims; in per cent. [3] Share of total assets booked by offices outside the home country, in per cent. [4] Total claims (cross-border claims plus claims on residents in host country) booked by offices in each location over total worldwide consolidated foreign claims. Excludes banks' "strictly domestic" claims, or their claims on residents of the home country in the domestic currency; in per cent.

Graph 8

Foreign claims scaled by world GDP: nationality basis

In per cent

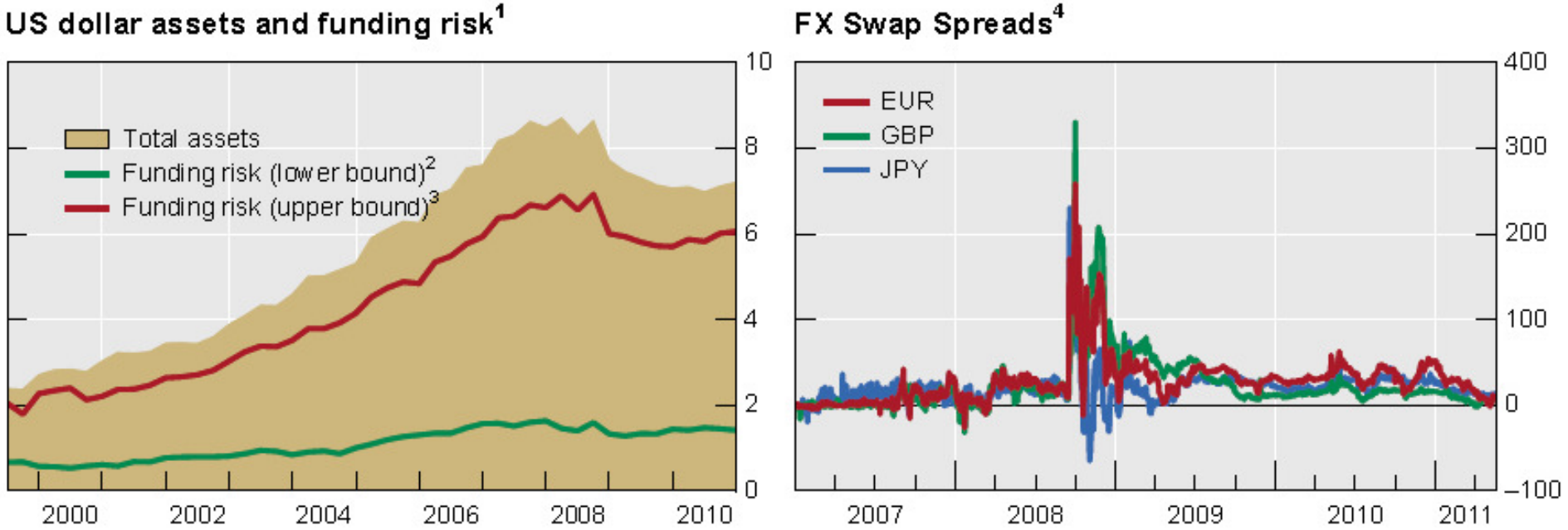


[1] Estimated totals for 19 banking systems (see data appendix in McGuire and von Peter (2009)). [2] Foreign claims excluding claims on residents of the home country booked by banks' foreign offices.

Sources: McGuire and von Peter (2009); IMF; BIS consolidated statistics (immediate borrower basis); BIS locational statistics by nationality.

Graph 9

US dollar assets and funding risk



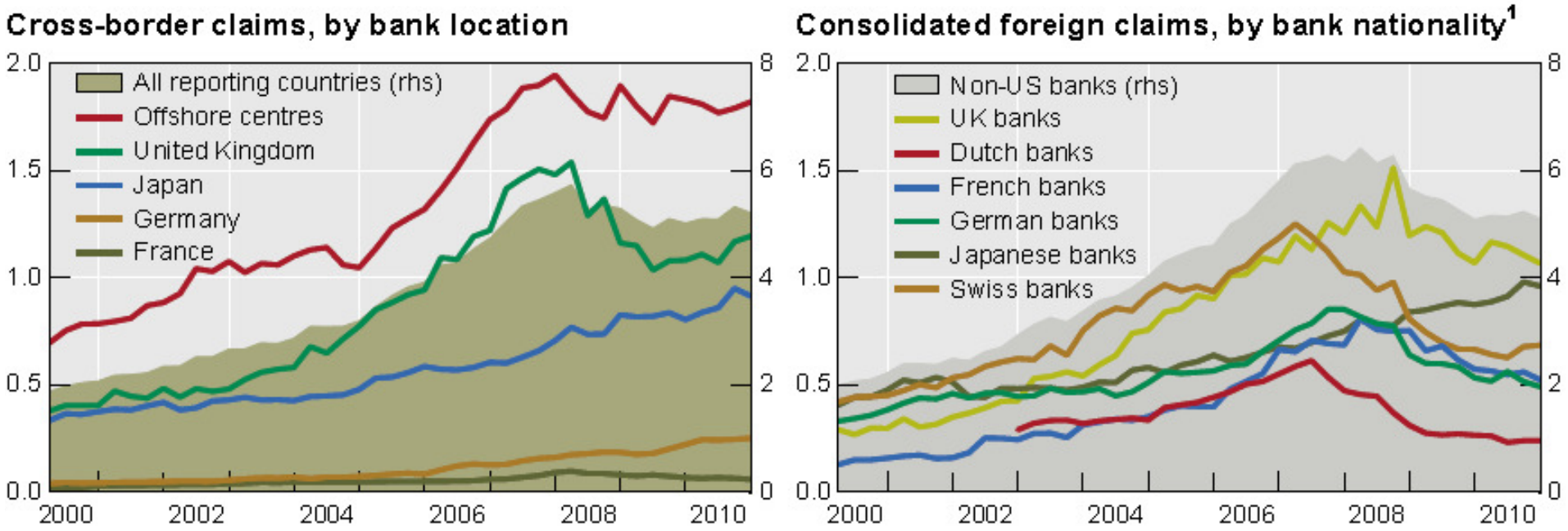
[1] In trillions of US dollars. Estimates are constructed by aggregating the on-balance sheet cross-border and local positions reported by Canadian, Dutch, German, Japanese, Swiss and UK banks' offices. [2] Net claims on non-banks, which is identical to the sum of net positions vis-à-vis other banks, vis-à-vis monetary authorities and net cross-currency (FX swap) funding. See McGuire and von Peter (2009) for details. [3] Same as the lower bound estimate, but includes *gross* liabilities to non-banks under the assumption that all liabilities are to these counterparties are short term. [4] In basis points. Spread between three-month FX swap-implied dollar rate and three-month Libor; the FX swap-implied dollar rate is the implied cost of raising US dollars via FX swaps using the funding currency. For details on calculation, see N Baba, F Packer and T Nagano, "The spillover of money market turbulence to FX swap and cross-currency swap markets", BIS Quarterly Review, March 2008, pp 73–86.

Sources: McGuire and von Peter (2009); BIS locational and consolidated banking statistics; Bloomberg; BIS calculations.

Graph 10

Claims on residents of the United States

Amounts outstanding, in trillions of US dollars

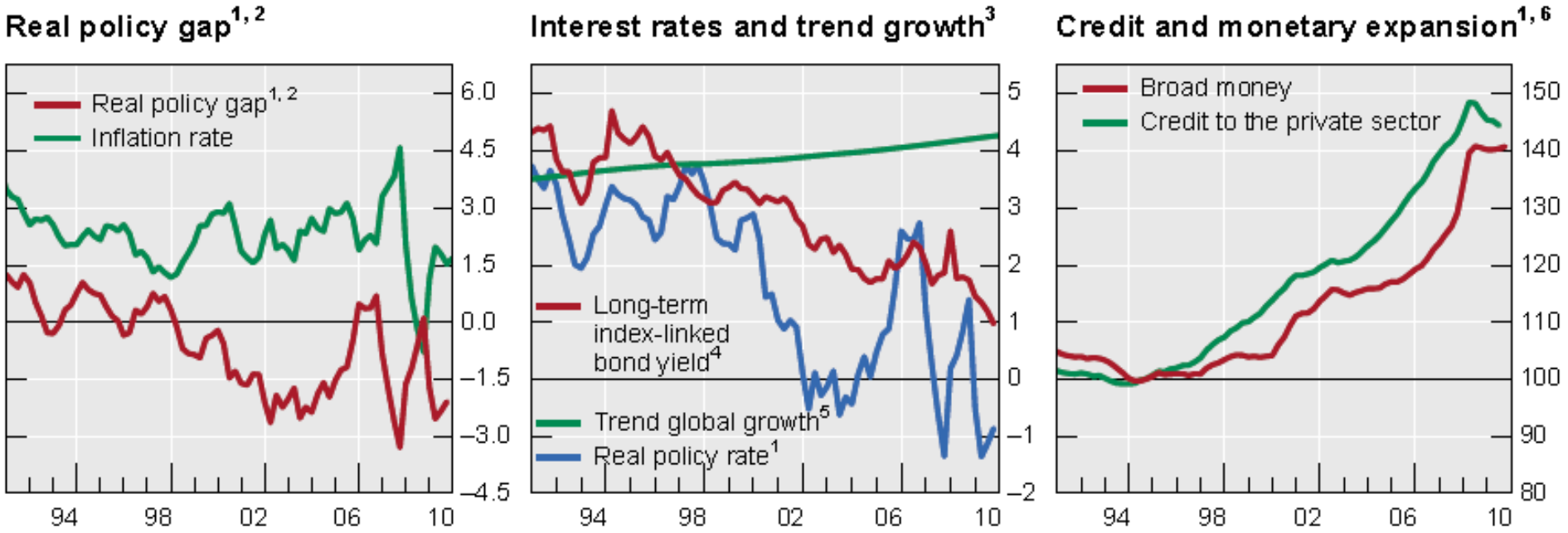


[1] Non-US banks' worldwide consolidated foreign claims (cross-border plus local claims).

Sources: BIS locational international banking statistics by residence, BIS consolidated banking statistics (IB basis).

Graph 11

Low interest rates, world growth and credit expansion



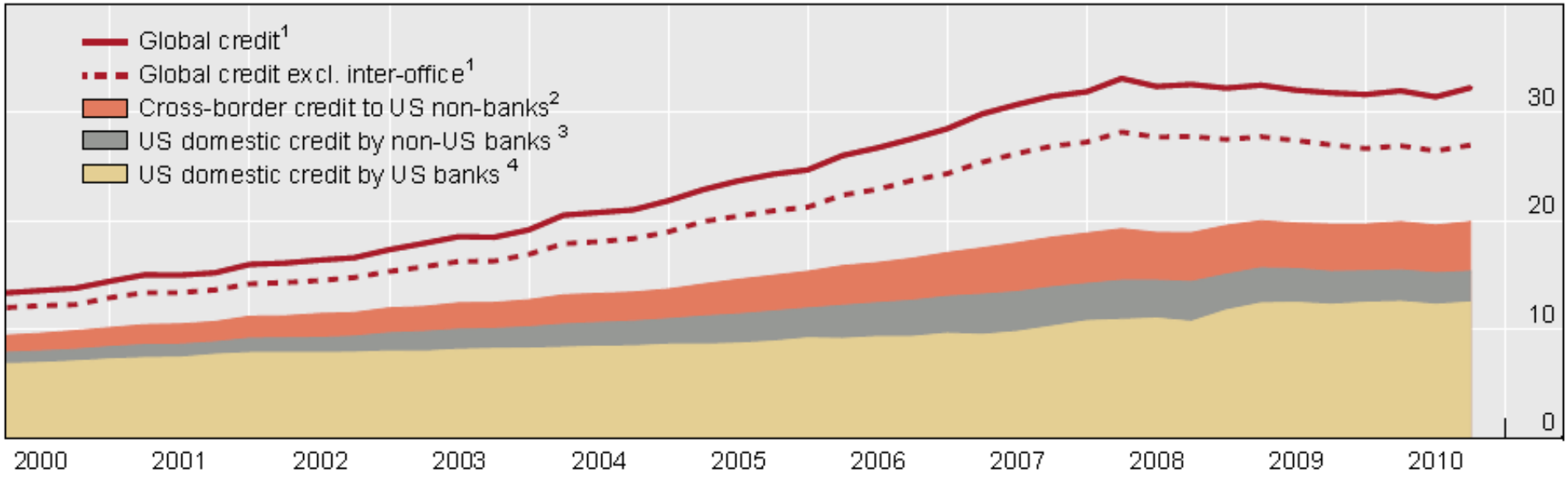
[1] Major OECD countries; weighted averages based on 2005 GDP and PPP exchange rates. [2] Real policy rate minus natural rate. The real rate is the nominal rate adjusted for four-quarter consumer price inflation. The natural rate is defined as the average real rate 1985–2005 (for Japan, 1985–95; for Switzerland 2000–05) plus the four-quarter growth in potential output less its long-term average. [3] In per cent. [4] From 1998; simple average of Australia, France, the United Kingdom and the United States; otherwise only Australia and the United Kingdom. [5] Trend world real GDP growth as estimated by the IMF in April 2009 WEO. [6] Relative to nominal GDP; 1995 = 100.

Sources: IMF; OECD; Bloomberg; national data; BIS calculations and estimates.

Graph 12

Composition of worldwide US dollar bank credit

Amounts outstanding, in trillions of US dollars



[1] Approximated by US dollar foreign claims vis-à-vis counterparties in all countries. Foreign claims are composed of cross-border claims booked by banks located in all reporting countries plus local claims (ie claims on residents of the banks' host country) booked by banks located outside the United States. Claims include also interbank claims. [2] Cross-border claims on non-banks in the United States by banks located in other BIS reporting countries (excluded from US domestic credit statistics). [3] Local US dollar claims booked by non-US banks located in the United States. [4] Estimated as total US domestic credit less US dollar-denominated local claims booked by foreign banks in the United States.

ISSUES IN
Economic
Policy
The Brookings Institution

The Blind Men and the Elephant

Barry Eichengreen

Number 1, January 2006

Main Factors

- The Deficient U.S. Savings View
  - The decline in savings rates in the United States has played an important role in the emergence of global and U.S. imbalances
- The New Economy View
  - Favorable productivity trends have made the U.S. a more appealing place to invest, attracting foreign savings
- The Global Savings Glut View
  - Global savings glut is a factor in the global imbalance insofar as it supports capital flows to and investment in the United States
- The Sino-American Co-Dependency View
  - The Sino-American co-dependency view emphasize show Asian countries, owing to a combination of heightened risk aversion following the 1997–8 crisis and their continued commitment to export-led growth, are happy with a situation where export demand is disproportionately important relative to domestic demand,

The Deficient U.S. Savings View

Roubini and Setser (2004)observe that a decline in public saving like that which occurred in the U.S. since 2001, a period which has seen a swing in the fiscal balance from +2.5 percent of GDP to -3.5 percent of GDP, will lead to a matching decline in national saving and a matching deterioration in the country's current account balance, other things equal.

The Deficient U.S. Savings View

- But econometric studies of the impact of budget deficits on current account deficits find evidence of only a relatively weak correlation between these variables even after controlling for these other factors
- One such argument is that globalization and deregulation have enhanced price flexibility, moderating the pressure on central banks to inflate in response to shocks, subduing inflation expectations and reducing the level of interest rates consistent with any level of savings

The New Economy View

Cooper (2004), Clarida (2005), and Backus and Lambert (2005) argues that the U.S. deficit reflects the attractions of investing in the United States and the consequent capital inflows that finance the country's current account deficit.

The New Economy View

- Timmer et al. (2003) suggest at most a 1/2 percent economy-wide productivity differential between the U.S. and Europe between 1995 and 2001, which was too small to plausibly drive a 6-per-cent-of-GDP swing in the U.S. current account balance.
- Purchases of U.S. assets by foreign central banks are still only a small fraction — according to recent data, about 25 percent — of total foreign purchases of U.S

The New Economy View

- Mussa (2004) states that for a current account deficit of 7 percent, to produce an external debt/GDP ratio below 100 percent in the steady state — which is still a much higher ratio than ever seen for a large, mature industrial economy — growth in the United States would have to accelerate to 5 percent (assuming a 2 percent annual inflation rate).
- Nominal growth would have to accelerate to an implausible (or inflationary) 12 percent for a deficit of 7 percent to be consistent with an external debt/GDP ratio of 50 percent.

Table 1. Sources of Labor Productivity Growth, United States and EU-15

	1980–1995	1995–2001
EU-15		
Average labor productivity	2.33	1.37
Contribution of capital deepening	1.21	0.90
Information technology	0.32	0.42
Noninformation technology	0.88	0.48
Total factor productivity	1.13	0.46
Production of IT		0.27
Other		0.19
Total IT contribution		**0.69**
U.S.		
Average labor productivity	1.37	1.85
Contribution of capital deepening	0.67	1.05
Information technology	0.48	0.72
Noninformation technology	0.19	0.32
Total factor productivity	0.70	0.80
Production of IT		0.44
Other		0.36
Total IT contribution		**1.16**

Source: Timmer et al. (2003).

The Global Savings Glut View

- Bernanke (2005) and Hubbard (2005), a combination of demographics, rapid growth, high oil prices, and financial development have encouraged saving outside the United States.
- In Asia excluding Japan, low dependency ratios are boosting savings as predicted by the life cycle model.
- In China, the limited availability of consumer goods and the underdevelopment of financial intermediation lead to high rates of forced saving.
- In petroleum-exporting countries in the Middle East and elsewhere, high oil prices are similarly fueling high savings rates

The Global Savings Glut View

- In the euro area, net household savings rates have fallen from 14 percent in the early 1990s to less than 10 percent today.
- In Japan, net household savings rates have fallen to 5 percent, again from about 14 percent in the early 1990s.
- Net household savings in Anglo-Saxon countries other than the United States (the UK, Canada, Australia, and New Zealand) have been running at similarly low rates.

Table 2. Global Savings and Investment Trends (as a percentage of GDP)

	Average 1990–99	Average 2000–02	2003	2004	Change: 1991–2004
World saving	22.9	23.4	23.9	24.9	*1.7*
Advanced economies	21.3	20.6	19.1	19.4	*-2.8*
United States	16.3	16.2	13.5	13.7	*-2.5*
Euro area	21.5	21.3	20.3	20.9	*-1.1*
Japan	31.6	27.8	27.1	27.6	*-6.8*
Emerging economies	25.3	27.2	29.8	31.5	*6.9*
Developing Asia	31.0	32.6	36.5	38.2	*9.5*
China	40.3	39.9	45.5	48.0	*9.6*
Latin America	18.3	17.8	20.0	21.0	*1.9*
Central and eastern Europe	20.6	18.8	18.6	19.1	*-7.0*
World investment	24.0	23.2	23.5	24.6	*0.1*
Advanced economies	21.8	21.0	20.0	20.7	*-2.5*
United States	18.7	19.4	18.4	19.7	*1.1*
Euro area	21.1	20.9	19.5	20.2	*-2.9*
Japan	29.3	25.3	23.9	23.9	*-9.0*
Emerging economies	27.2	26.1	27.9	29.2	*2.8*
Developing Asia	32.2	30.8	33.6	35.5	*5.1*
China	38.5	37.9	42.4	43.9	*9.7*
Latin America	20.9	19.8	19.0	19.8	*0.3*
Central and eastern Europe	23.3	23.1	23.2	23.8	*-2.9*

Source: BIS Annual Report (2005).

Variable	Saving to GDP				Investment to GDP			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Lagged saving to GDP	0.92	0.87	0.89	0.89	0.89	0.87	0.85	0.84
	(56.96)	*(38.99)*	*(43.37)*	*(41.98)*	*(39.11)*	*(32.03)*	*(30.12)*	*(29.31)*
Growth of GDP per capita	0.07	0.10	1.00	0.10	0.06	0.12	0.12	0.12
	(3.52)	*(4.11)*	*(4.04)*	*(3.88)*	*(2.63)*	*(4.52)*	*(4.46)*	*(4.57)*
Interest rate	0.09	0.24	0.22	0.21	-0.18	-0.02	-0.03	-0.01
	(0.40)	*(1.02)*	*(0.94)*	*(0.90)*	*(0.73)*	*(0.07)*	*(0.13)*	*(0.03)*
Private credit to GDP	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(1.66)	*(0.37)*	*(0.26)*	*(0.01)*	*(0.33)*	*(0.33)*	*(0.05)*	*(0.14)*
△ Private credit to GDP	0.02	-0.01	-0.01	0.00	-0.02	-0.08	-0.08	-0.10
	(1.24)	*(0.26)*	*(0.37)*	*(0.06)*	*(0.87)*	*(3.26)*	*(3.45)*	*(4.09)*
Elderly dependency ratio	-0.05	-0.06	-0.05	-0.05	-0.02	-0.02	-0.04	-0.05
	(2.68)	*(1.93)*	*(2.06)*	*(1.99)*	*(0.98)*	*(0.84)*	*(1.26)*	*(1.74)*
Fiscal deficit to GDP	-0.02	0.00	0.00	0.00	0.00	0.01	0.00	0.00
	(0.81)	*(0.09)*	*(0.08)*	*(0.10)*	*(0.15)*	*(0.30)*	*(0.10)*	*(0.10)*
Terms of trade growth	0.05	0.07	0.07	0.07	-0.04	-0.03	-0.03	-0.03
	(3.70)	*(4.75)*	*(4.59)*	*(4.59)*	*(2.29)*	*(1.64)*	*(1.94)*	*(1.99)*
M2 to GDP		0.01	0.01	0.01		0.00	0.01	0.02
		(1.07)	*(1.18)*	*(1.11)*		*(0.35)*	*(0.85)*	*(1.63)*
Domestic credit to GDP		-0.01	-0.01	-0.01		-0.01	-0.01	-0.01
		(2.52)	*(2.39)*	*(2.60)*		*(1.82)*	*(1.88)*	*(1.91)*
Mexican-crisis dummy applied to:								
Emerging market			0.00				0.00	
			(0.76)				*(0.70)*	
Asia				0.00				0.01
				(0.04)				*(1.21)*
Latin America				0.01				0.01
				(0.58)				*(0.87)*
Asian-crisis dummy applied to:								
Emerging Markets			-0.01				-0.02	
			(1.25)				(3.59)	
Asia				0.00				-0.04
				(0.46)				*(4.95)*
Latin America				-0.02				-0.02
				(1.57)				*(1.87)*
Number of observations:	452	350	350	350	453	351	351	351
Wald Chi2:	4694.19	2983.19	3987.56	3984.54	2150.83	1835.68	1719.06	1680.36

Note: z-statistics in parentheses.

Regression Result

- There is a tendency for countries with higher growth rates to save more, as if some time must pass before consumption demands catch up to higher incomes.
- The importance of the lagged dependent variable also points in the direction of slow adjustment.
- In addition, as emerging markets mature and their growth rates converge with those of the advanced countries, there will be a tendency toward convergence of savings rates.
- The tendency for countries with deeper financial markets, as measured by the ratio of domestic credit to GDP, to save less may be taken as support for the belief that financial development will further boost consumption spending in emerging markets.
- Finally, the elderly dependency ratio has a negative effect on saving, as predicted by the life cycle model.
- Again the implication is that savings rates in Asia may come down with the ageing of populations.

Regression Result

- There is a strong negative coefficient for investment by Asian countries in the post-1997 period, which is simply the counterpart of their rapid reserve accumulation (given the absence of a savings effect).

The Sino-American Co-Dependency View

- Since Asian countries, and China in particular, see export demand as the engine of economic growth, they maintain an undervalued exchange rate against the dollar in order to stimulate exports.
- The result is persistent current account surpluses for Asia and, given the overvaluation of the dollar, deficits for the United States.
- The U.S., for its part, is equally happy with this state of affairs, since it is able to live beyond its means.