

Global Banking Glut and Its Consequences

Hyun Song Shin
Princeton University

2011 Ely Lectures, Johns Hopkins University
Lecture 1

Global Liquidity Backdrop

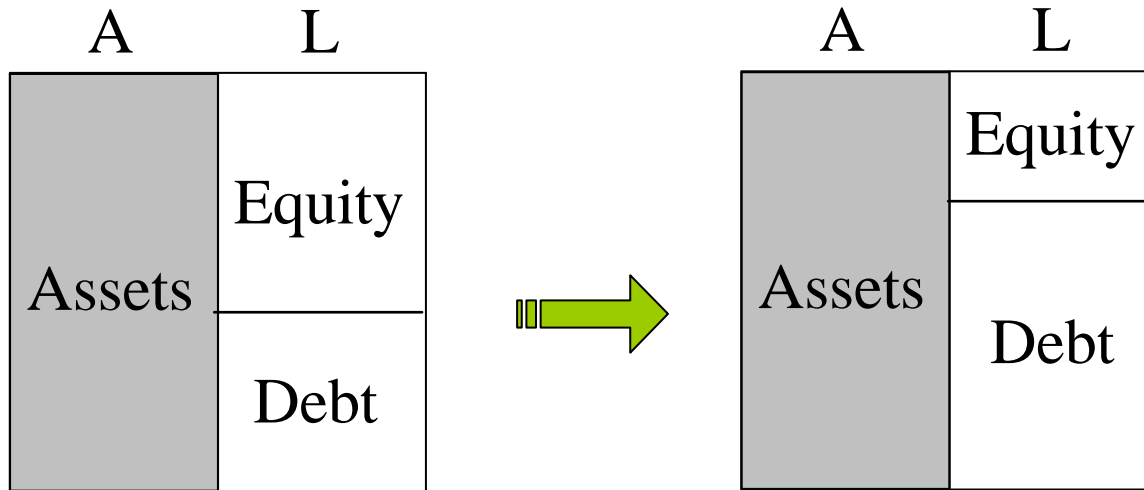
- Banking sector as driver of global financial conditions
- Global banks (esp. European global banks) as transmission channel of global liquidity conditions
- US Dollar as currency underpinning global banking system

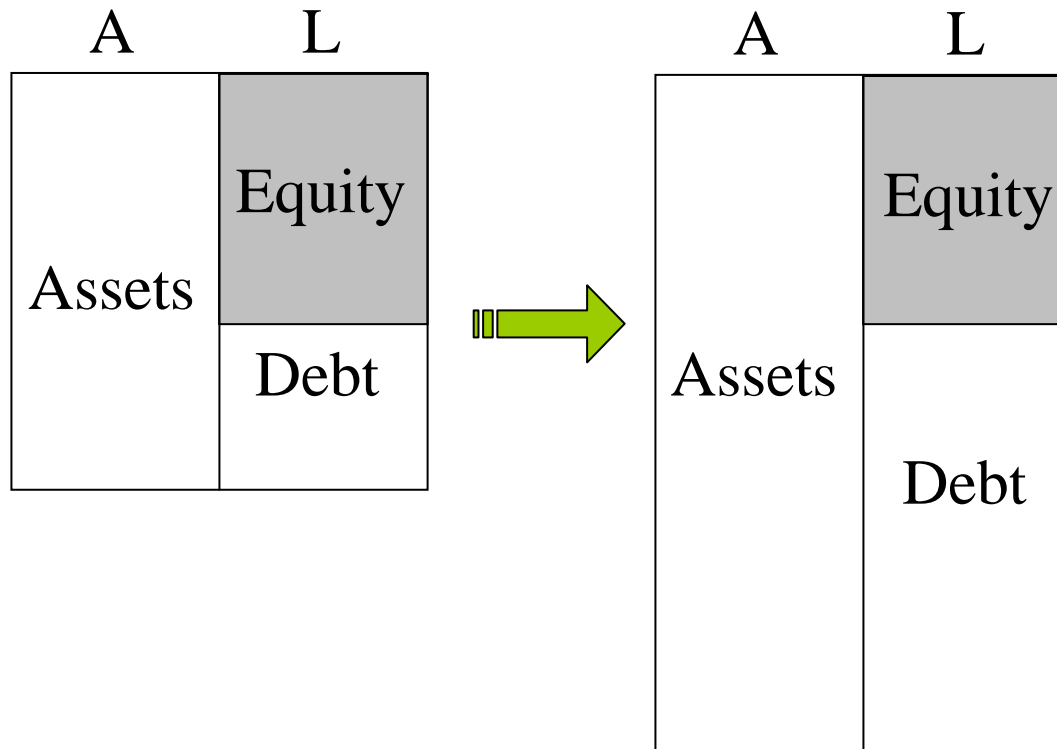
Mapping Global Liquidity

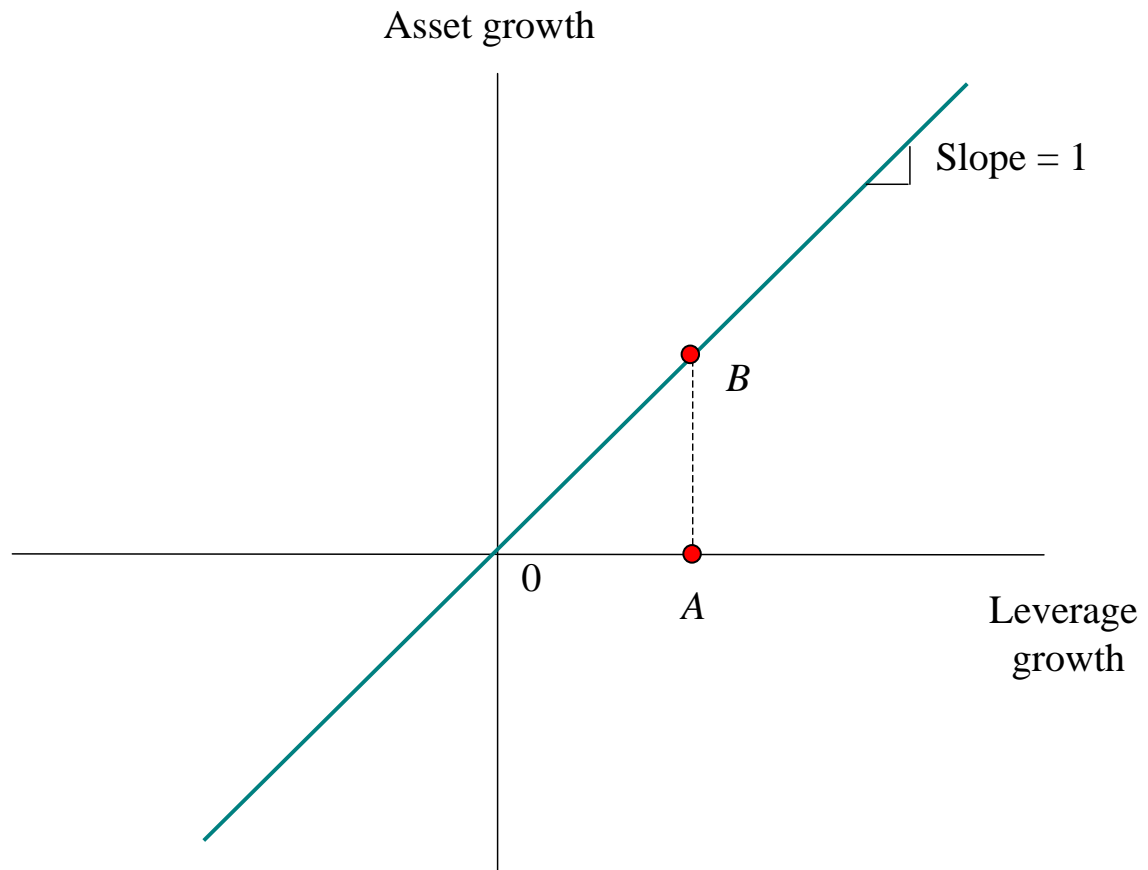
- Consequences of global liquidity for **United States**
- Consequences of global liquidity for **Europe**
- Consequences of global liquidity for **emerging/developing economies**

Corporate Finance of Banking

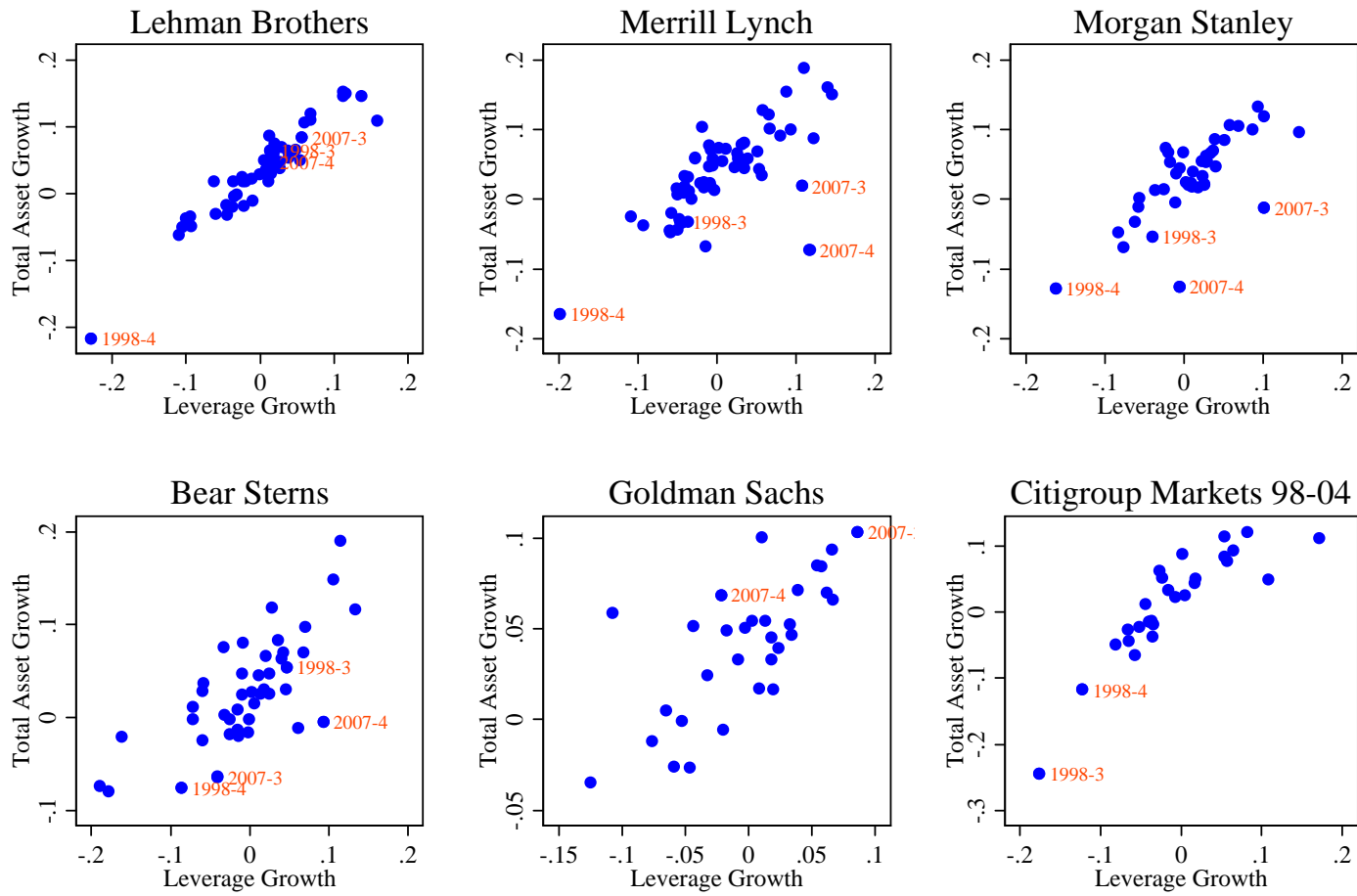
A	L
Assets	Equity
	Debt



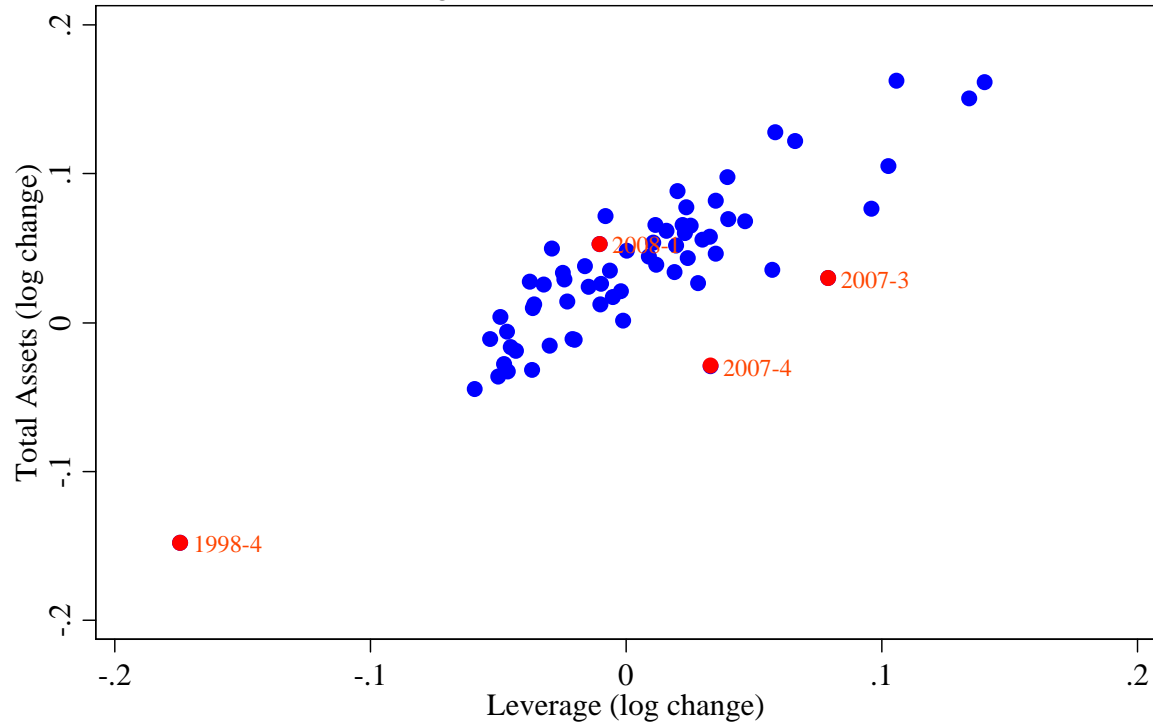




Total Assets and Leverage



Leverage and Total Assets Growth
Asset weighted, 1992Q3-2008Q1, Source: SEC



BIS Banking Statistics

- BIS **locational** banking statistics
 - Classification based on **residence**
 - Branches/subsidiaries of global banks classified under host country
 - Consistent with balance of payments and national income statistics
 - **Cross-border claims**
- BIS **consolidated** banking statistics
 - Classification based on **nationality** of parent
 - **Foreign claims** = cross-border claims + local claims
 - **International claims** = cross-border claims + local claims in foreign currency

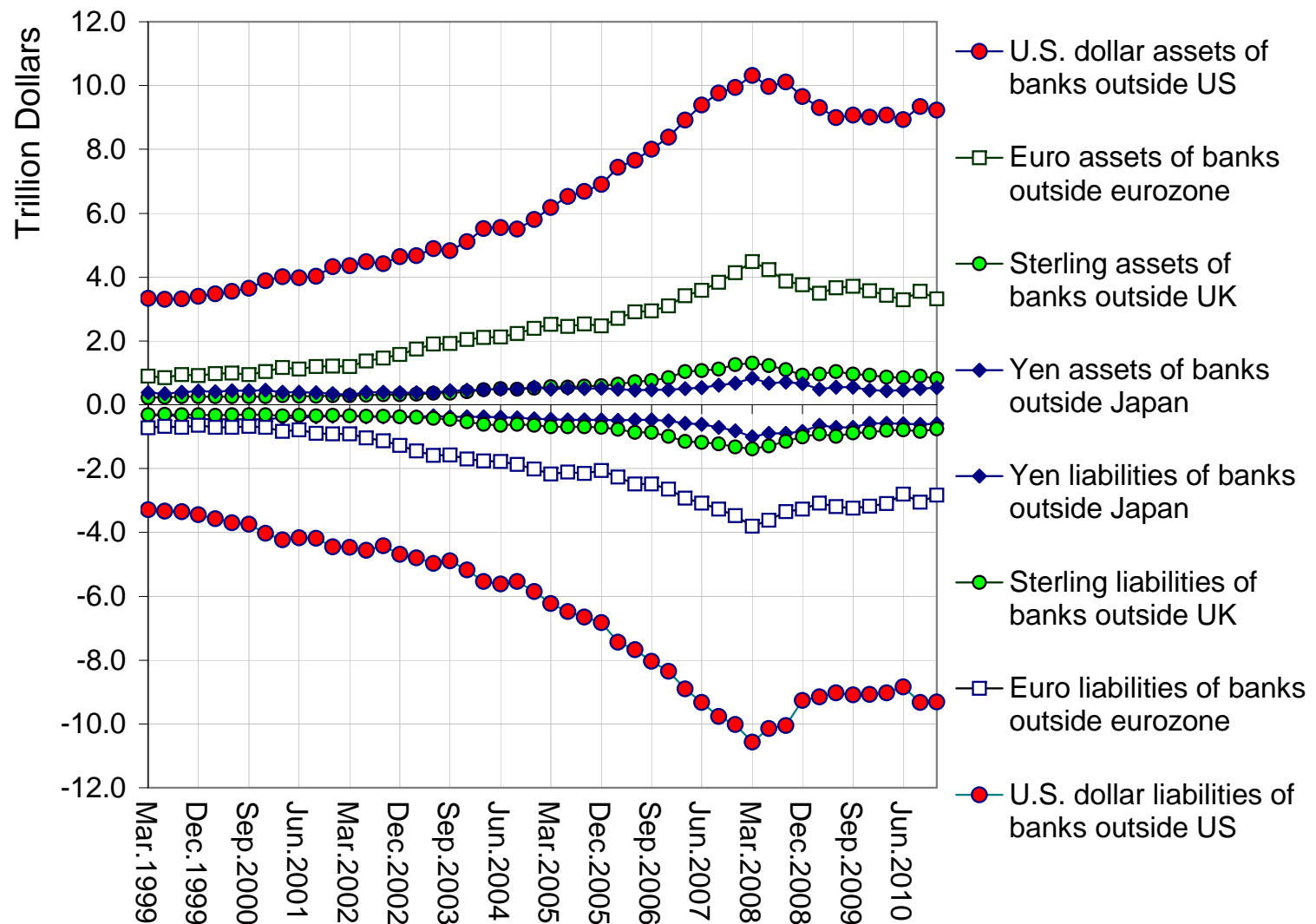


Figure 1: Cross-border foreign currency claims of BIS reporting banks by currency (Source: BIS locational banking statistics, Table 5A)

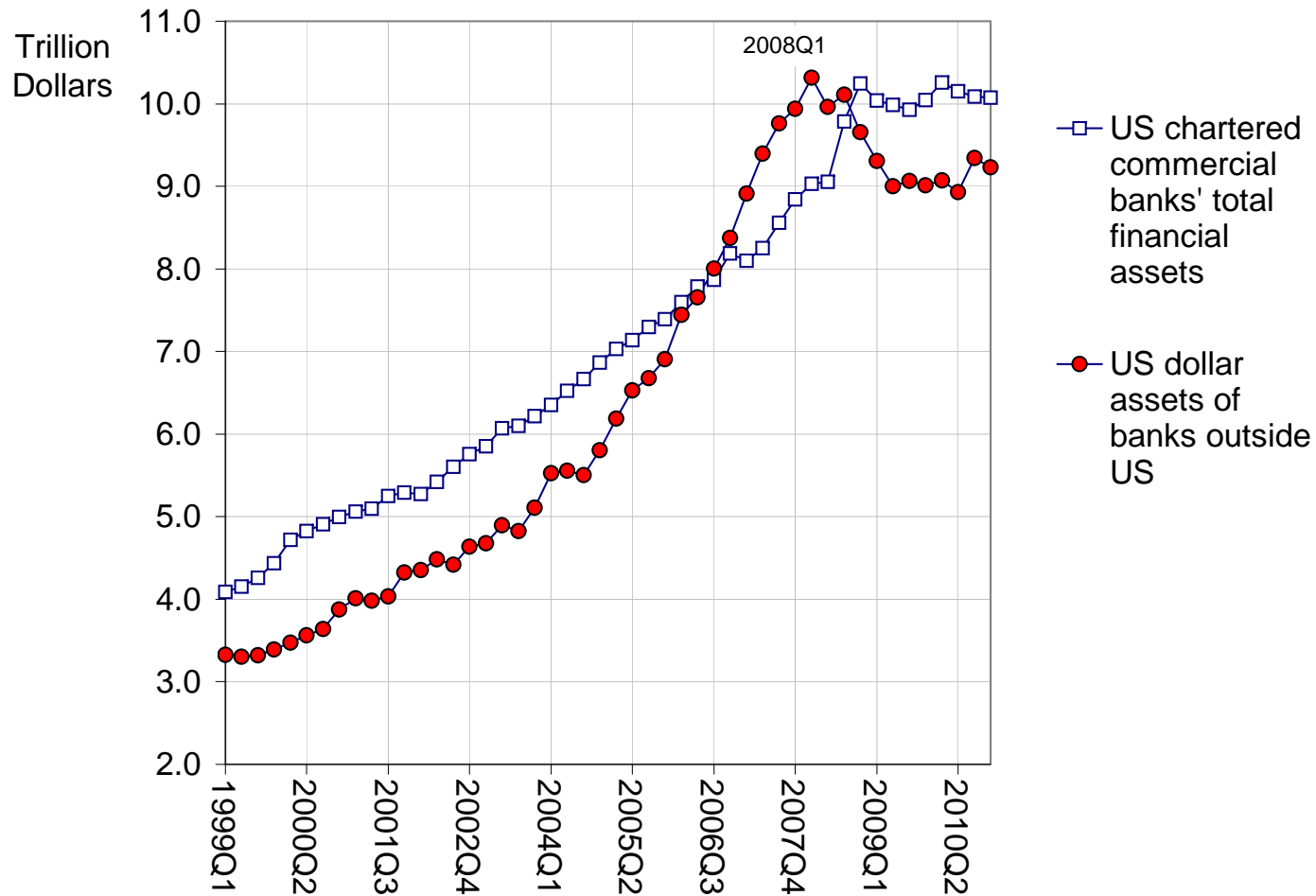


Figure 2: US dollar cross-border foreign currency claims and US commercial bank total assets (Source: Flow of Funds, Federal Reserve and BIS locational banking statistics, Table 5A)

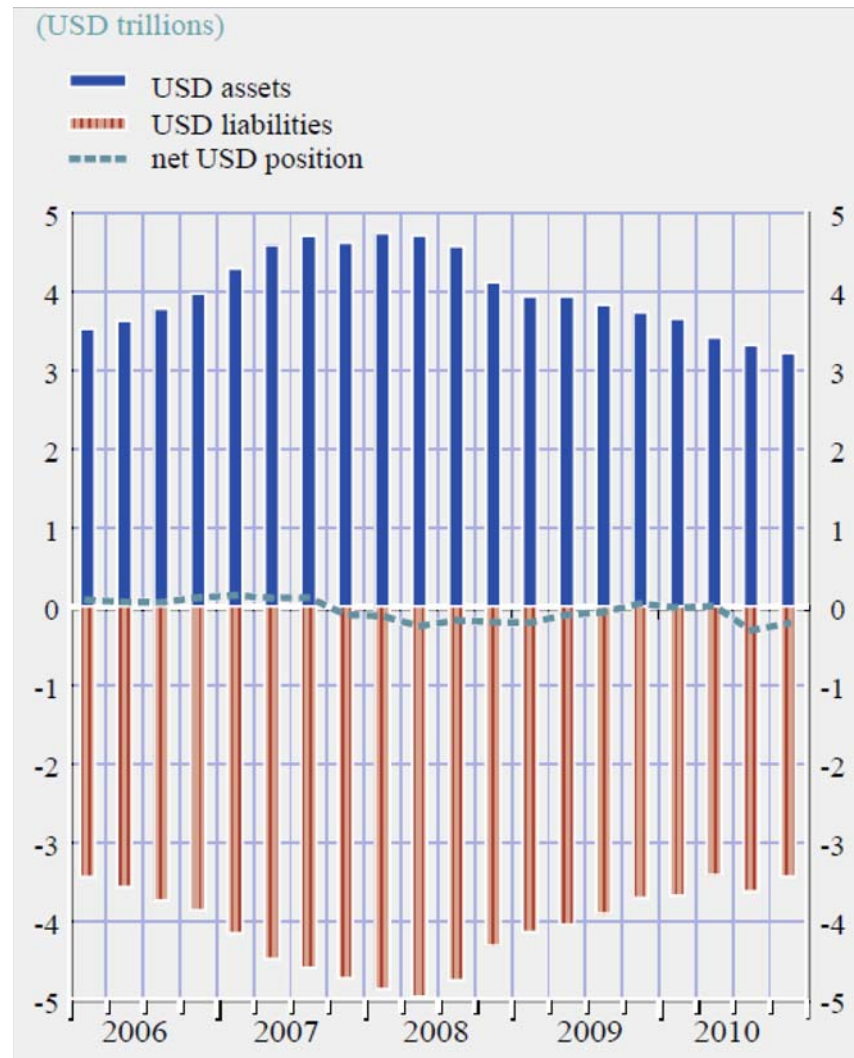


Figure 3: US Dollar-denominated assets and liabilities of euro area banks (Source: ECB Financial Stability Review, June 2011, p. 102)

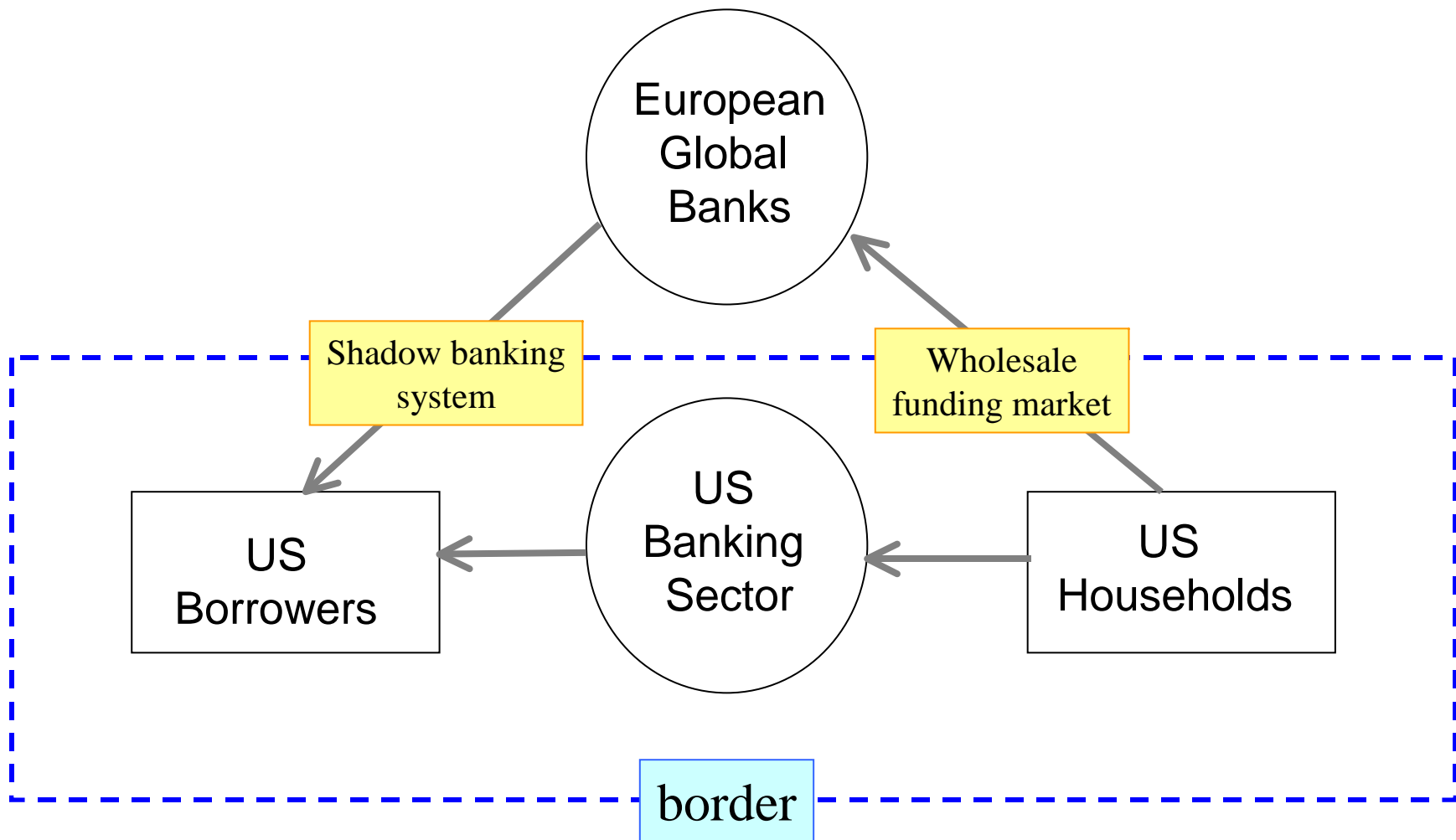


Figure 4: European global banks add intermediation capacity for connecting US savers and borrowers

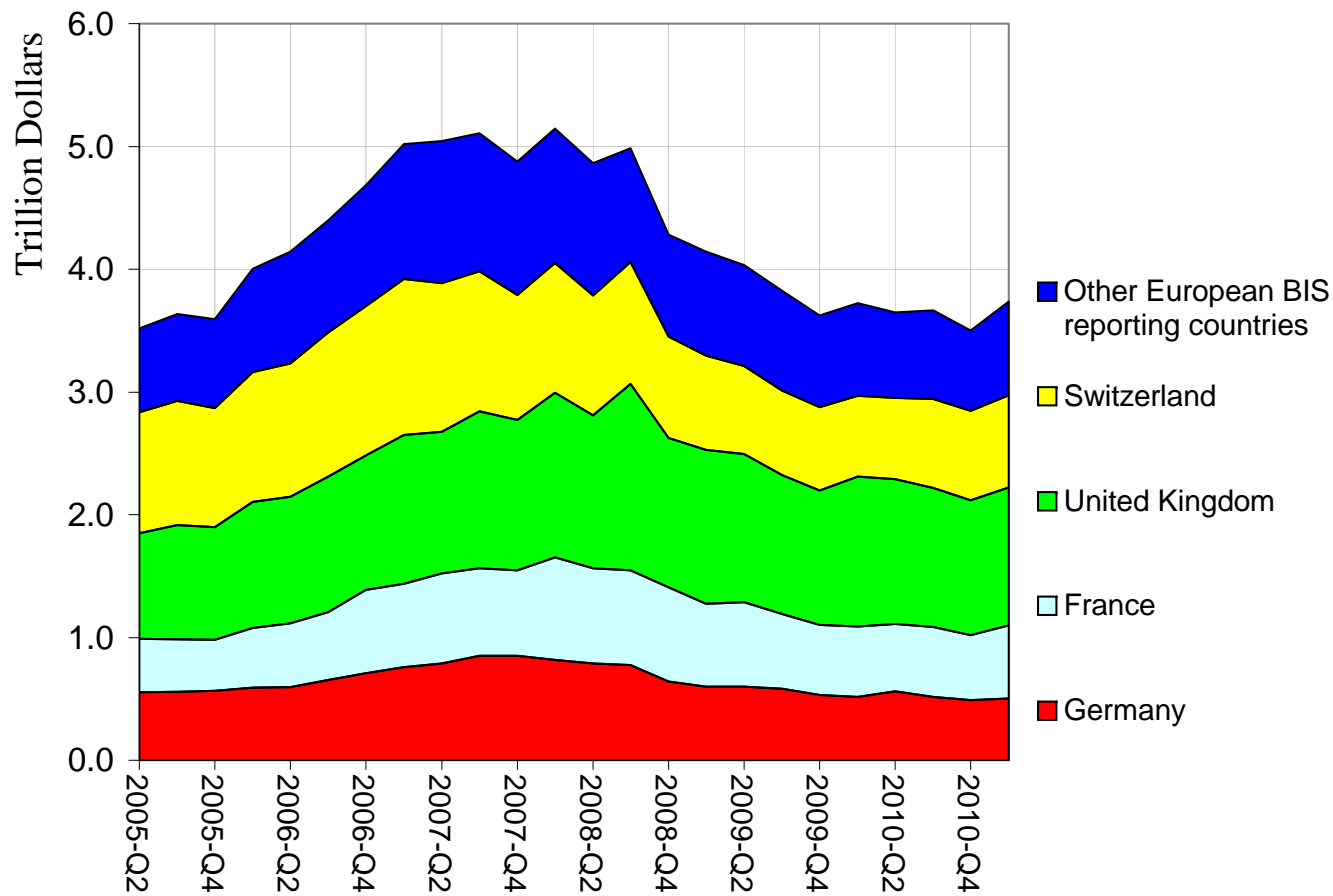


Figure 5: International claims of European BIS reporting banks on US counterparties (Source: BIS consolidated banking statistics, Table 9D) ¹⁴

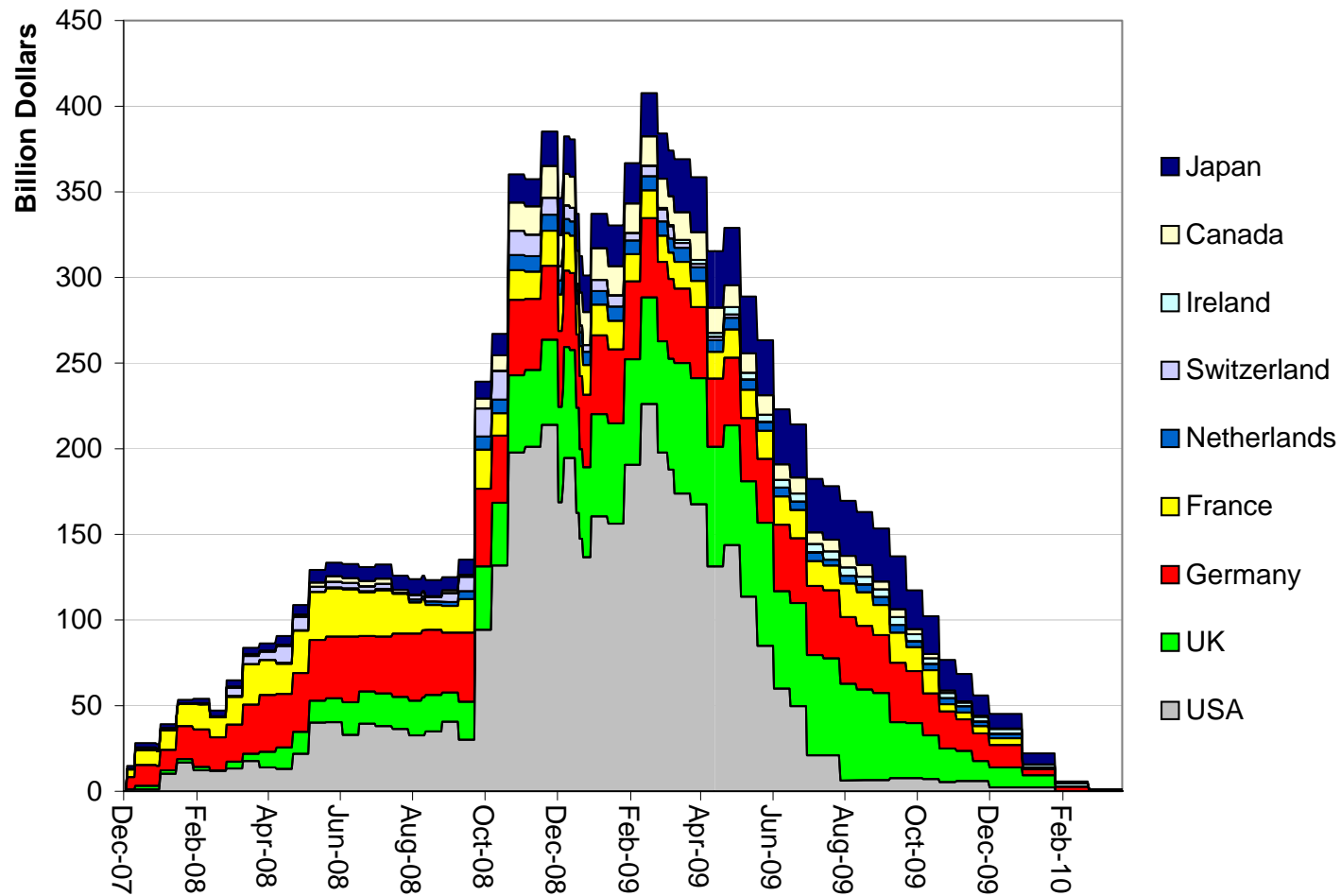


Figure 6: Claims outstanding on Federal Reserve Term Auction Facility (TAF) on US and non-US banks (Source: Federal Reserve disclosures on TAF)

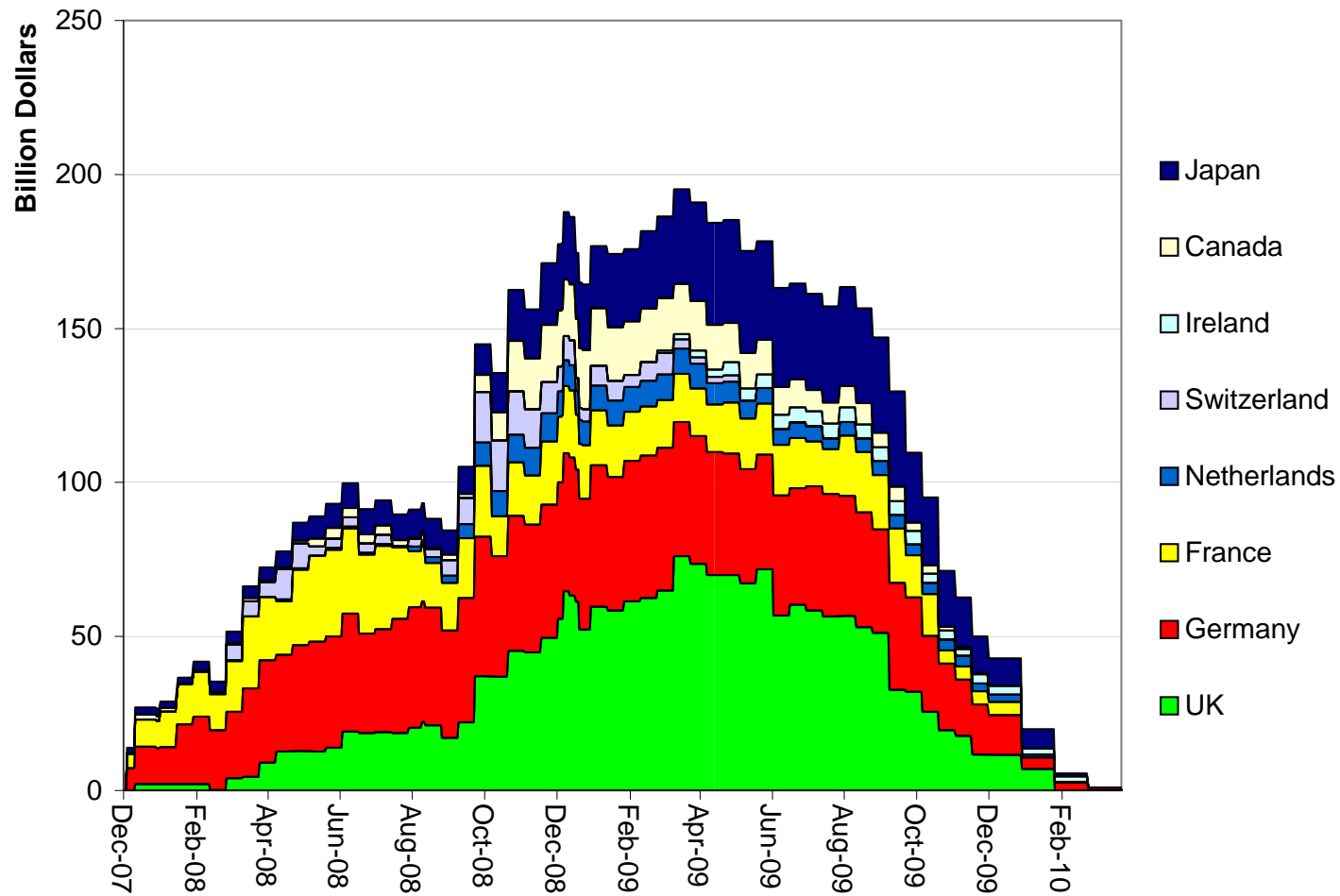


Figure 7: Claims outstanding on Federal Reserve Term Auction Facility (TAF) on non-US banks (Source: Federal Reserve disclosures on TAF) 16

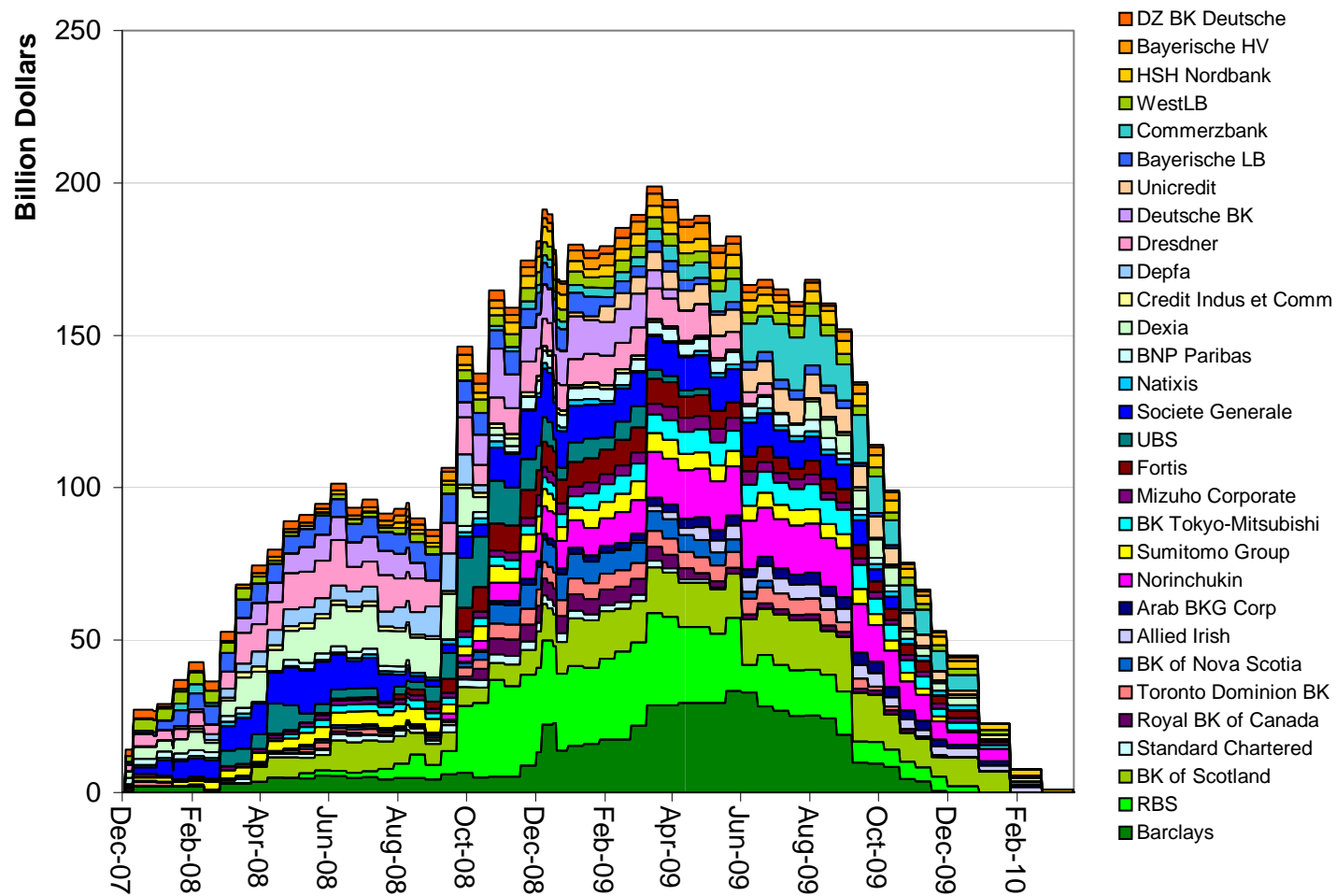


Figure 8: Top 30 claims outstanding on Federal Reserve Term Auction Facility (TAF) on non-US banks (Source: Federal Reserve disclosures on TAF)

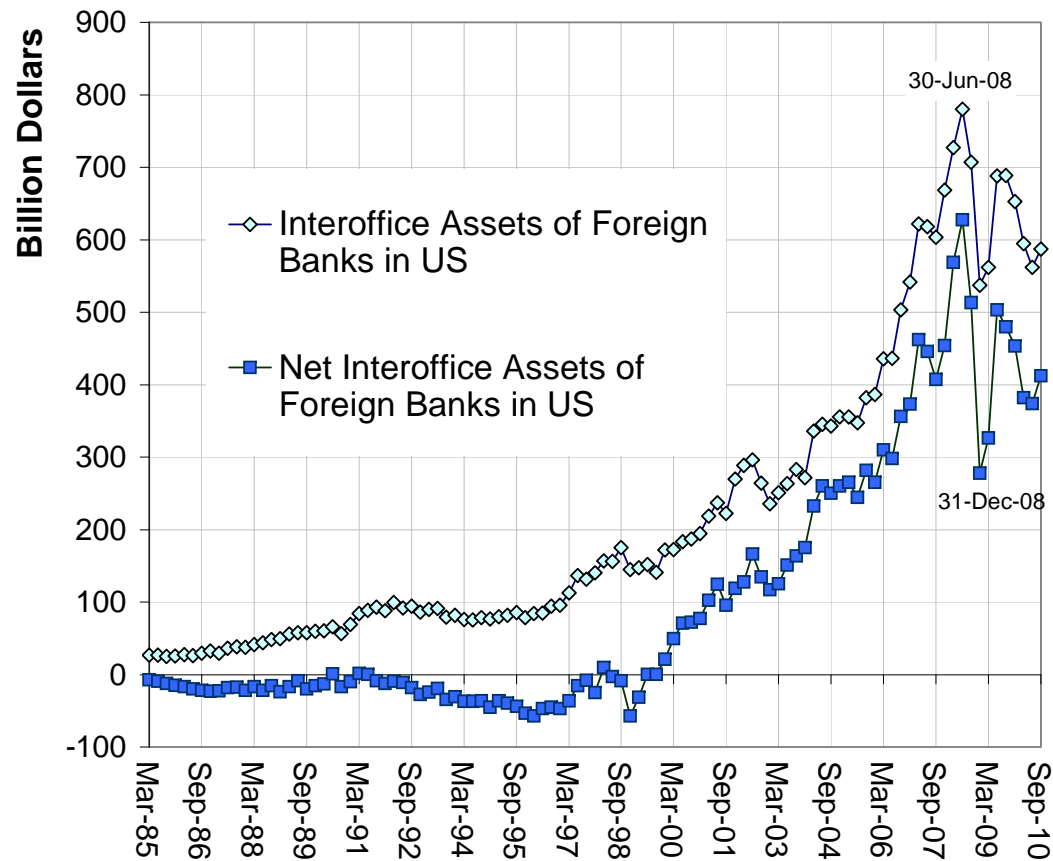


Figure 9: Interoffice assets of foreign banks in the United States (Source: Federal Reserve, series on “Assets and Liabilities of U.S. Branches and Agencies of Foreign Banks”)

Interoffice Assets of Foreign Banks in Japan

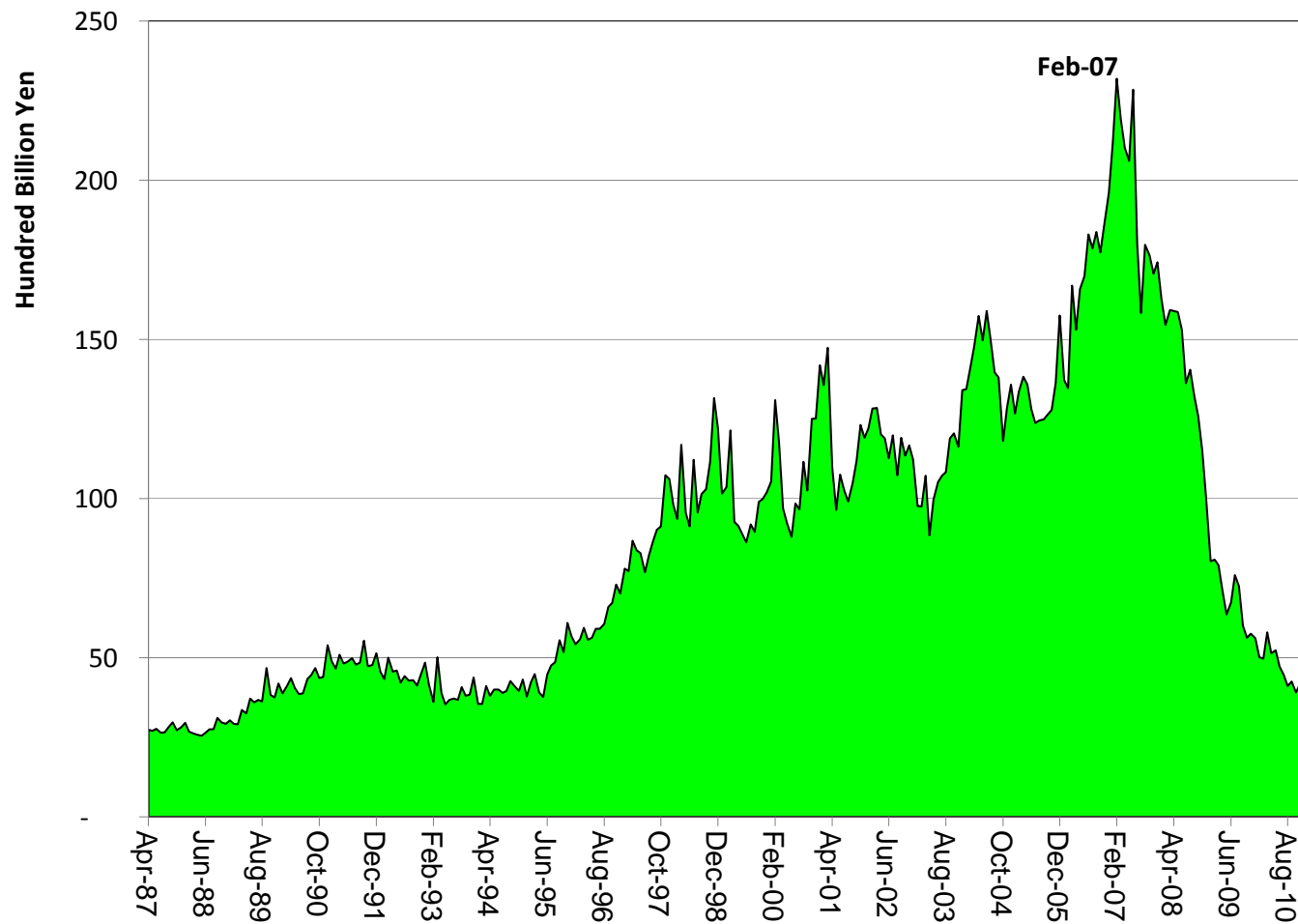


Figure 10: Interoffice assets of foreign banks in Japan (Source: Bank of Japan)

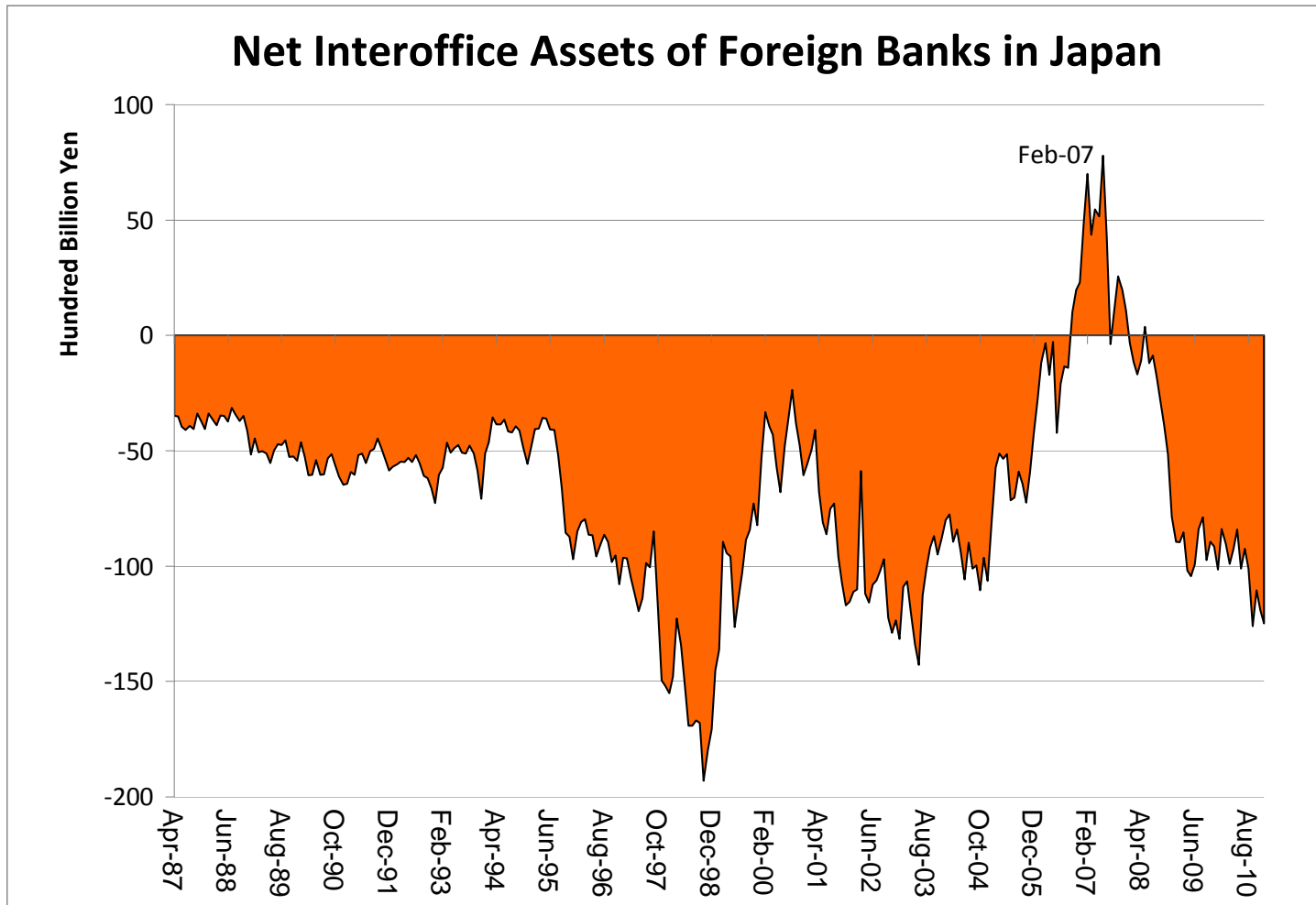


Figure 11: Net interoffice assets of foreign banks in Japan (Source: Bank of Japan)

Fund	CDs and time deposits	Commercial paper	Corporate notes	Repos	Total	Net assets, \$ billions
Fidelity Cash Reserves	91 / 73	28 / 27	54 / 34	70 / 70	63 / 51	128
JPMorgan Prime Money Market	98 / 94	35 / 31	57 / 39	73 / 73	67 / 62	120
Vanguard Prime Money Market	94 / 69	39 / 25	0 / 0	68 / 68	33 / 24	106
BlackRock Liquidity Temp Reserve Primary	95 / 91	4 / 4	37 / 17	13 / 13	51 / 47	68
Schwab Value Advantage	98 / 88	24 / 18	54 / 51	18 / 18	43 / 37	65
GS FS Prime Obligations	91 / 64	24 / 19	58 / 48	67 / 67	54 / 40	61
Dreyfus Inst Cash Advantage	0 / 0	0 / 0	0 / 0	2/2	0 / 0	56
Fidelity Inst Money Market	85 / 71	32 / 25	33 / 24	0 / 0	62 / 51	49
Morgan Stanley Inst Liq Prime	100 / 91	44 / 44	51 / 36	45 / 45	61 / 54	47
Dreyfus Cash Management	4 / 4	19 / 19	0 / 0	91 / 91	37 / 37	34
AIM STIT Liquid Assets	92 / 75	46 / 30	31 / 31	0 / 0	70 / 56	33
Barclays Inst Money Market	95 / 69	25 / 20	27 / 16	84 / 84	57 / 45	32
Merrill Lynch Premier Inst Portfolio	67 / 57	10/6	30 / 21	21 / 21	24 / 19	31
Fidelity Inst Money Market: Prime	92 / 80	32 / 25	46 / 36	45 / 45	60 / 51	26
Total	100 / 90	33 / 33	51 / 34	15 / 15	56 / 47	21
Total	92 / 78	26 / 22	47 / 33	51 / 51	50 / 42	878
Share of asset class in assets	34	26	13	11	100	

Figure 12: US prime money funds' assets in non-US/European bank obligations (% each asset class) mid-2008 (Source: Baba, McCauley and Ramaswamy, BIS Quarterly Review 2009)

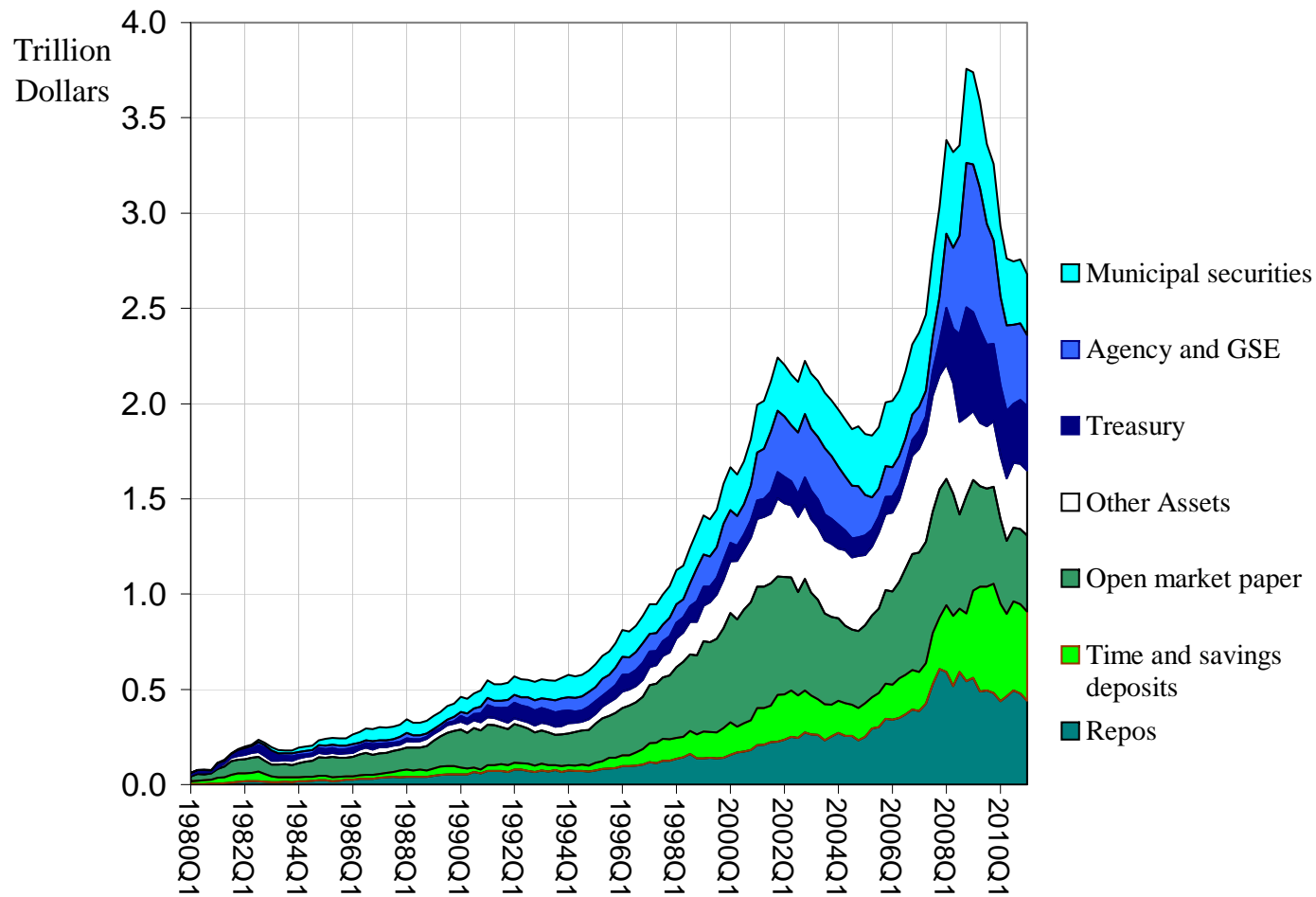


Figure 13: US Money market mutual fund assets (Source: Federal Reserve, Flow of Funds)

ABCP Sponsor Location and Funding Currency (\$ million)

Currency / Sponsor Location	U.S. dollars	Euro	Yen	Other	Total
Belgium	30,473	4,729	0	0	35,202
Denmark	1,796	0	0	0	1,796
France	51,237	23,670	228	557	75,692
Germany	139,068	62,885	0	2,566	204,519
Italy	1,365	0	0	0	1,365
Japan	18,107	0	22,713	0	40,820
Netherlands	56,790	65,859	0	3,116	125,765
Sweden	1,719	0	0	0	1,719
Switzerland	13,082	0	0	0	13,082
United Kingdom	92,842	62,298	0	3,209	158,349
United States	302,054	0	0	2,996	305,050
Total	714,871	219,441	22,941	12,444	969,697

Figure 14: ABCP sponsor location and funding currency January 1, 2007 (Source: Acharya and Schnabel, IMF Economic Review 2009, data from Moody's)

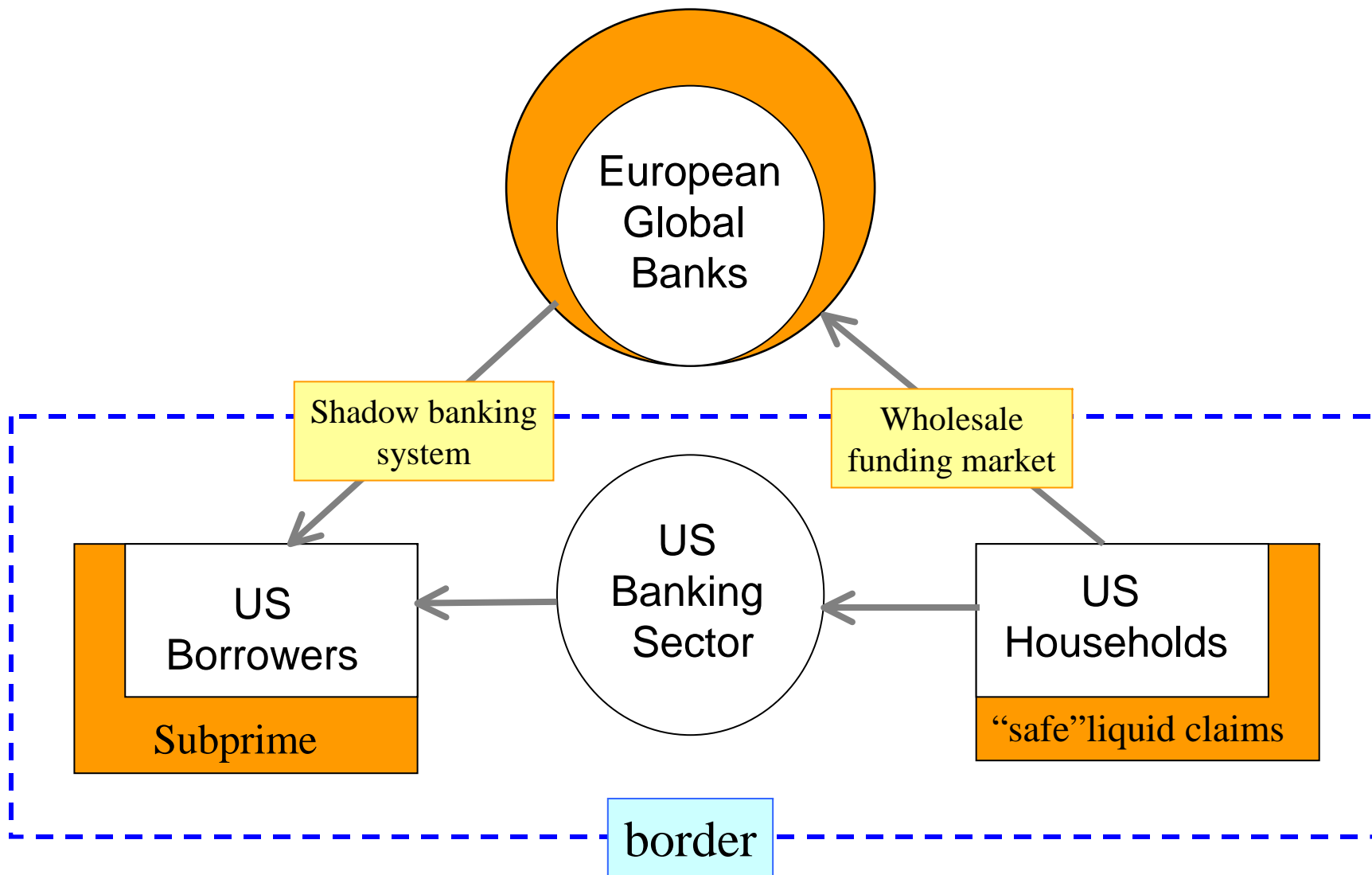


Figure 15: Expanding lending capacity of European banks draw USD funding to finance increased USD lending through shadow banking system

USD Billion	Total Bond Holdings	Treasury	Agency	Corporate	Corporate MBS
Total	6,642	2,194	1,413	3,035	594
Advanced	3,508	963	508	2,037	350
Offshore	762	85	111	566	204
Emerging/developing	2,373	1,147	794	432	40
China	894	477	387	29	9
Japan	976	622	231	123	17
Cayman Islands	461	29	56	376	157
United Kingdom	500	48	28	424	90
Luxembourg	469	56	42	371	39
Belgium	372	15	33	323	19
Ireland	261	16	30	215	33
Switzerland	155	40	18	97	20
Germany	166	46	15	105	33
Netherlands	136	17	24	96	32
France	90	17	11	62	31

Figure 16: Foreign holding of US bonds in mid 2007 (Source: US Treasury and Milesi-Ferretti (2009), G20 Mumbai Volume)

Gross Positions versus Net Positions

- Large **gross positions** created by European banks impact on US financial conditions.
- But **net positions** (current account imbalances) are small since assets and liabilities net out.
 - Eurzone has near-balanced current account
 - UK has current account deficit
 - Borio and Disyatat (2011)
- Focusing on **Global Savings Glut** (net positions) misses the **Global Banking Glut** (gross positions)

Why did European banks expand so much?

Two candidate explanations:

- Basel II and EU Capital Adequacy Directive (CAD) allowed European banks to expand assets without incurring rising **risk-weighted assets**
- Advent of Euro opened up cross-border banking market within the eurozone

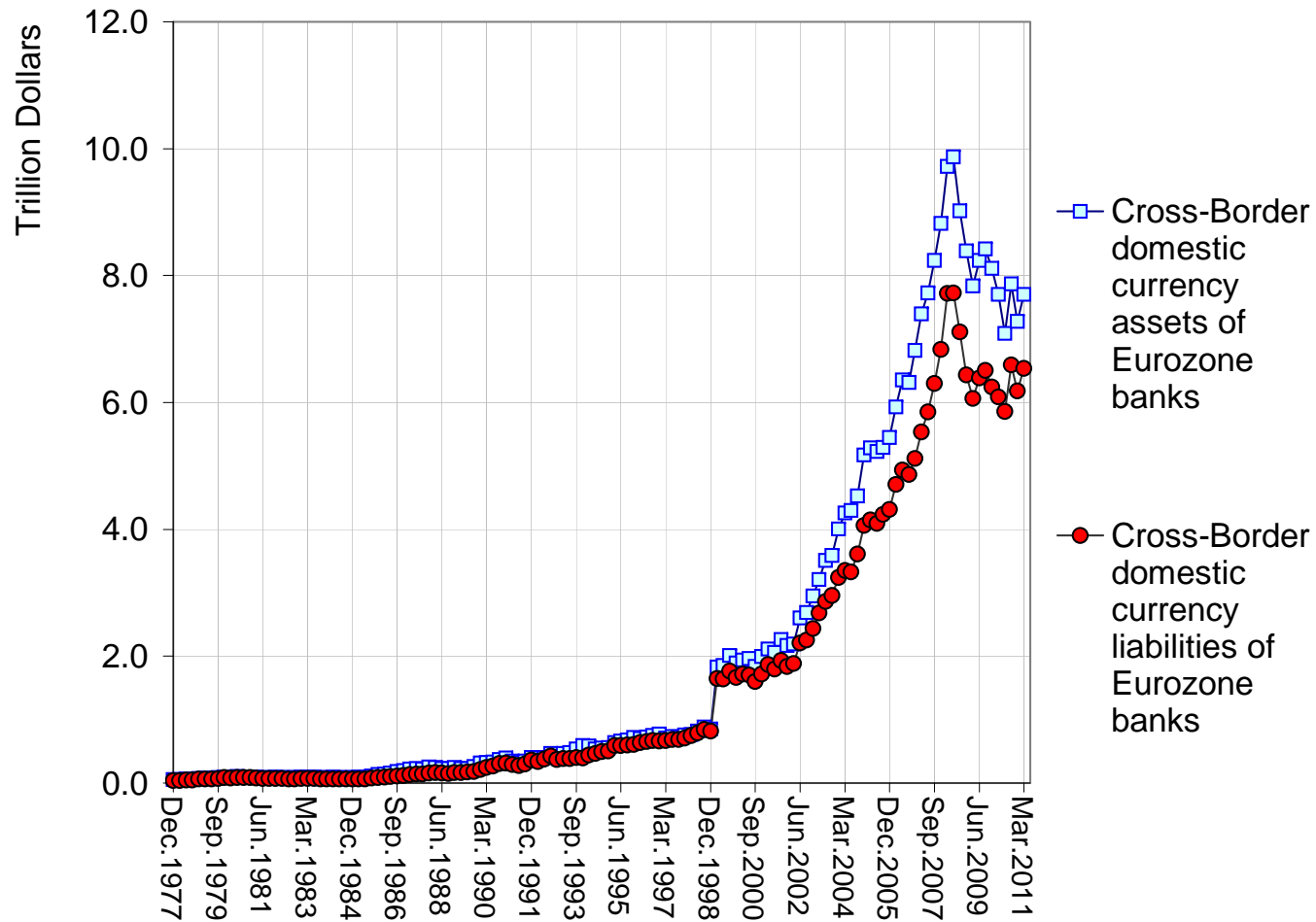


Figure 17: Cross-border domestic currency assets and liabilities of eurozone banks (Source: BIS locational banking statistics, Table 5A)

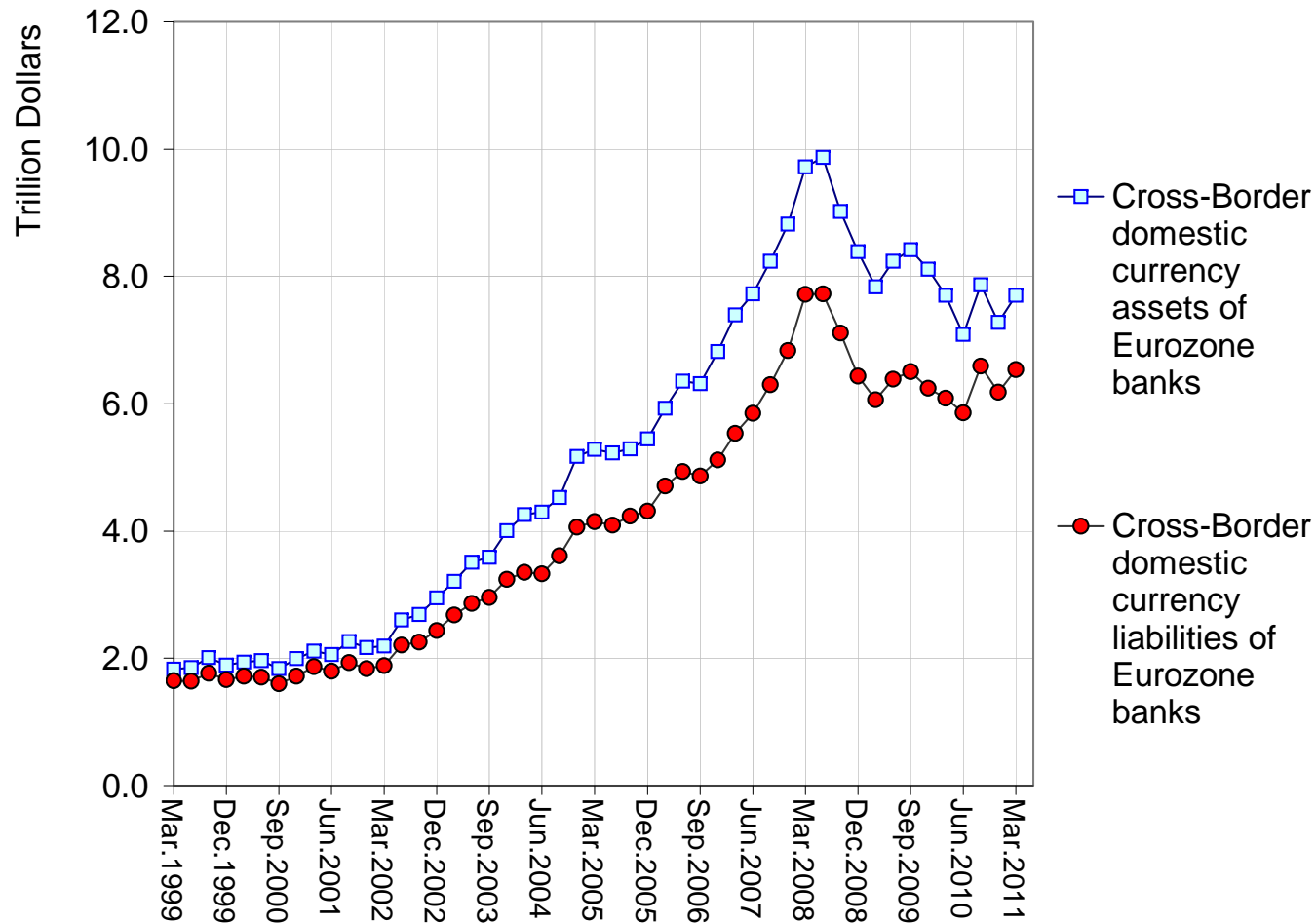


Figure 18: Cross-border domestic currency assets and liabilities of eurozone banks (Source: BIS locational banking statistics, Table 5A)

Claims of European Banks on Counterparties in Spain

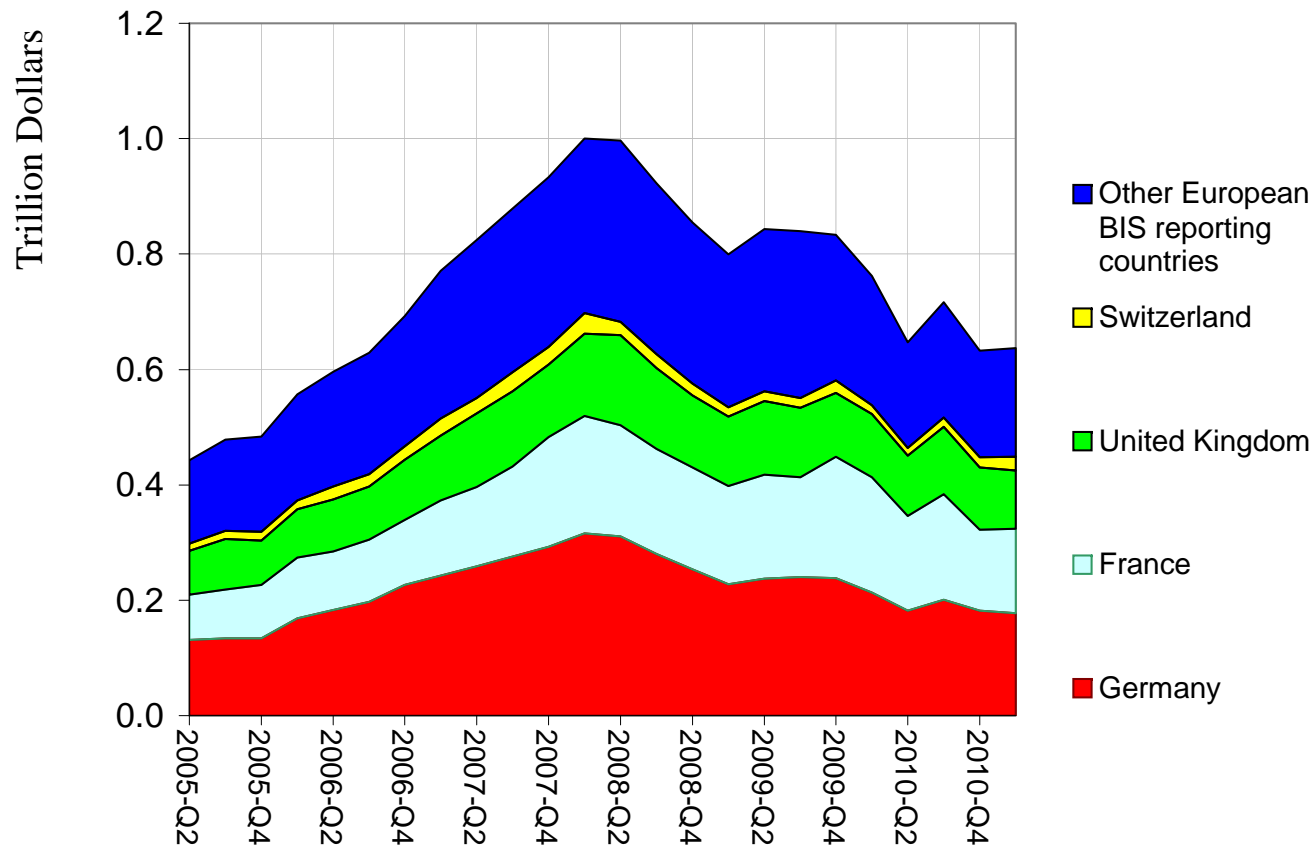


Figure 19: International claims of European BIS-reporting banks on counterparties in Spain (Source: BIS consolidated banking statistics³⁰, Table 9D)

Claims of European banks on Counterparties in Ireland

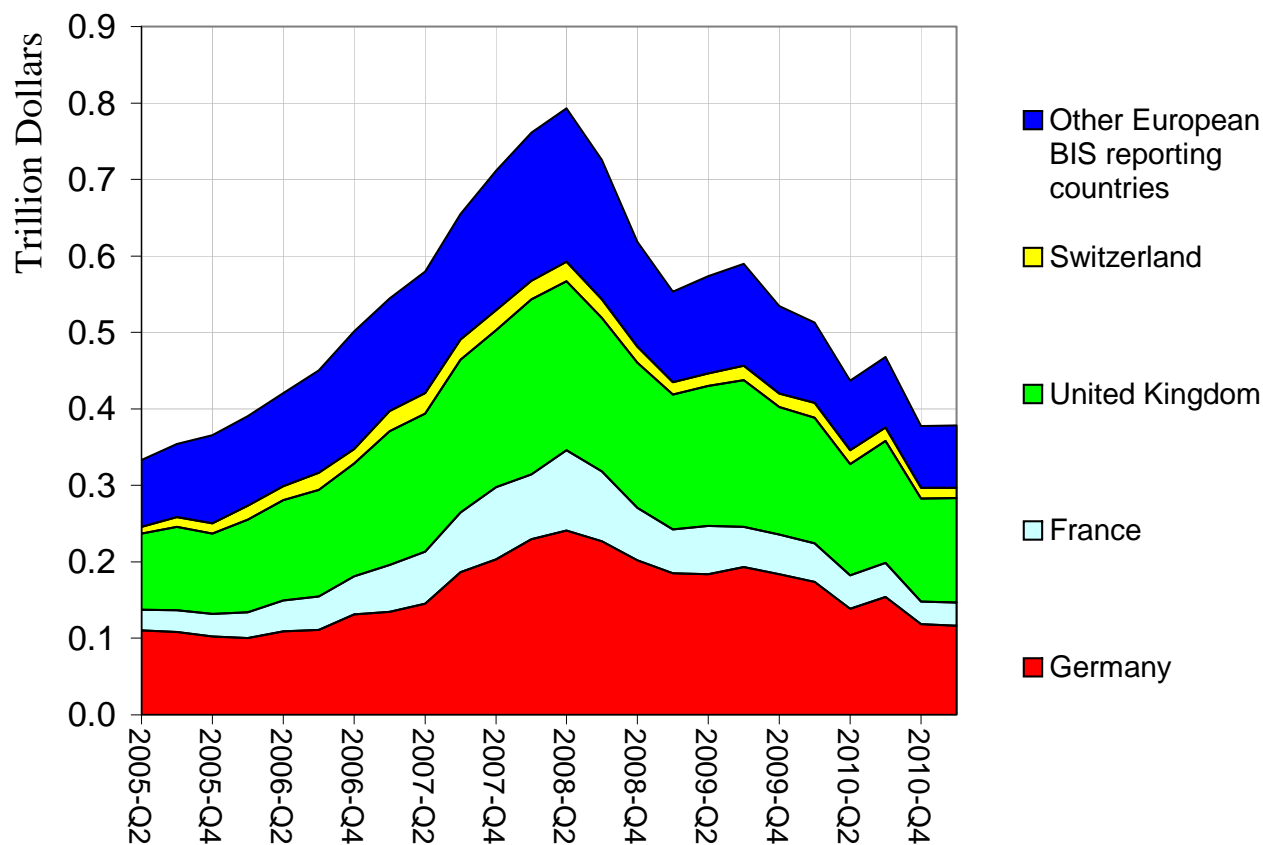


Figure 20: International claims of European BIS-reporting banks on counterparties in Ireland (Source: BIS consolidated banking statistics¹, Table 9D)

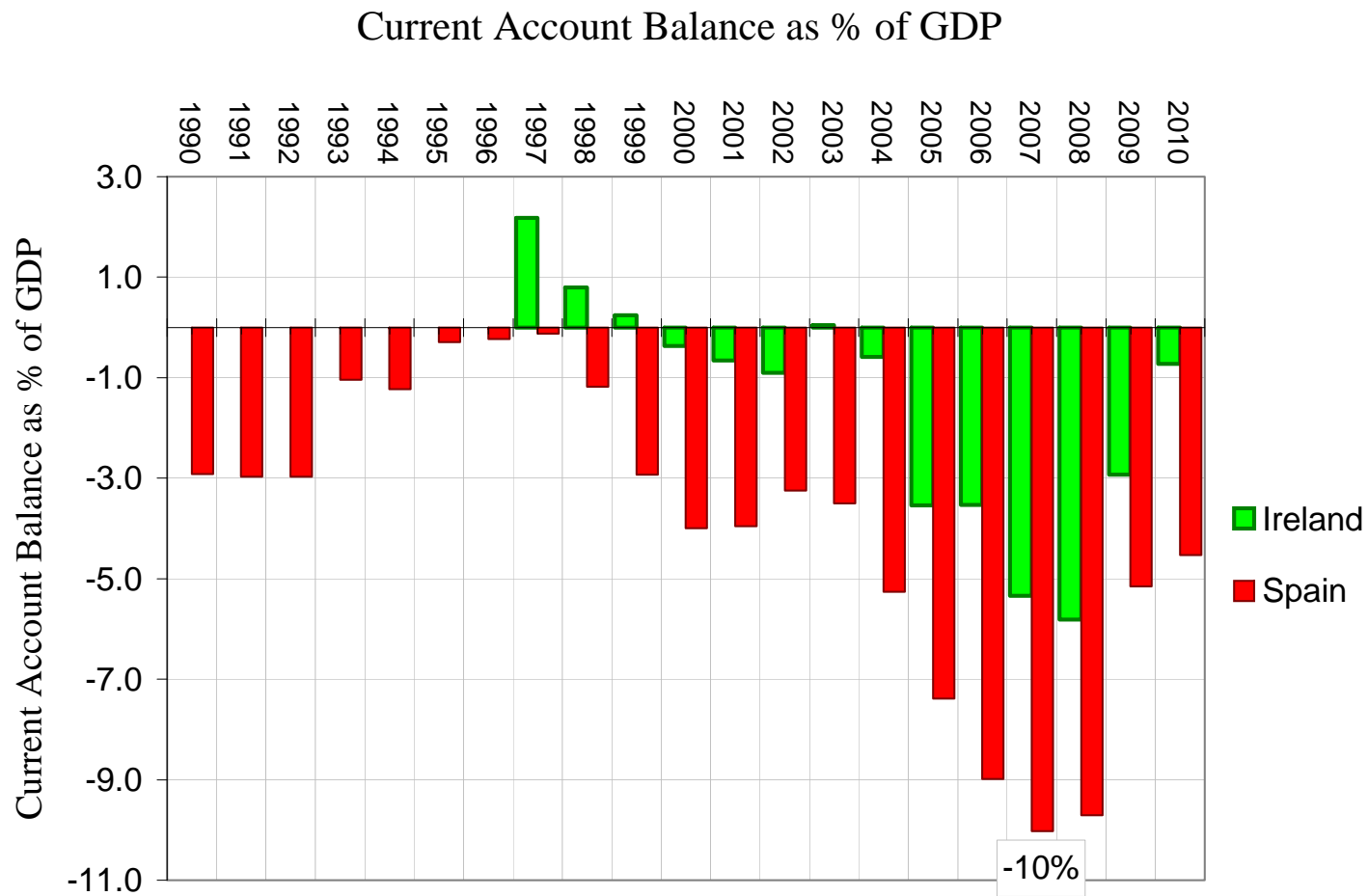


Figure 21: Current account of Ireland and Spain (Source: IMF International Financial Statistics)

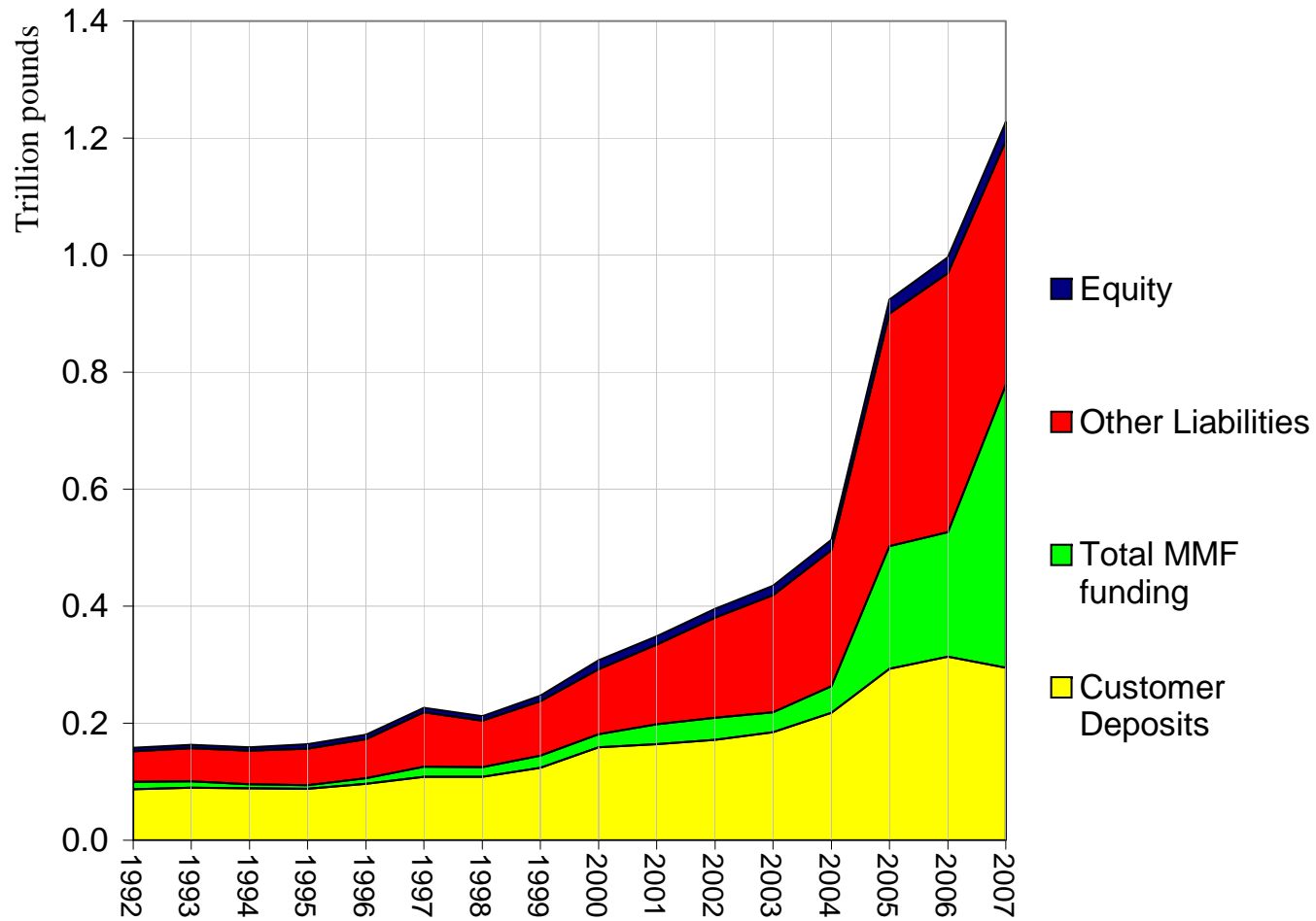


Figure 22: Total Liabilities of Barclays (1992 - 2007) (Source: Bankscope)

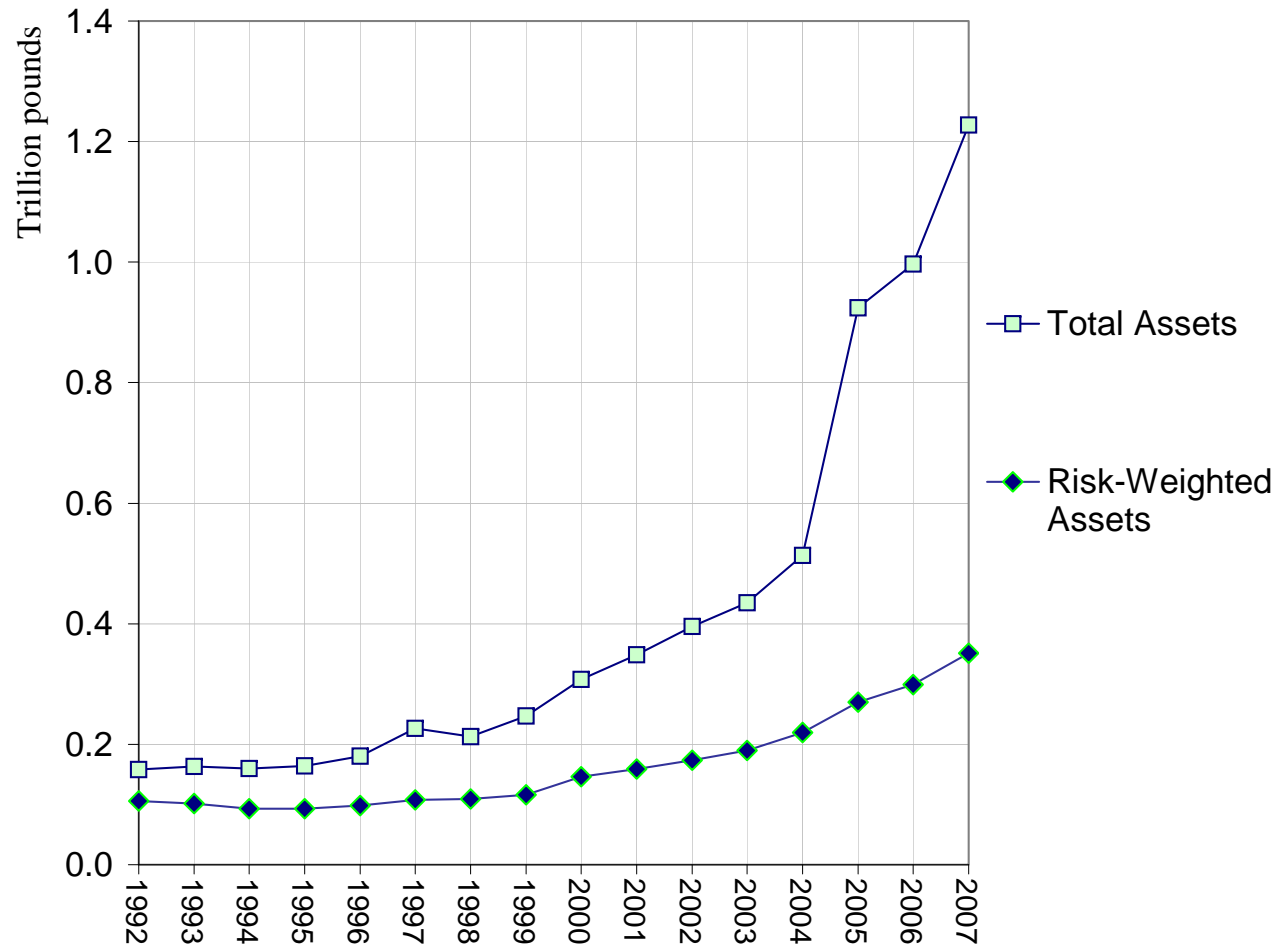


Figure 23: Barclays, risk-weighted assets and total assets (Source: Bankscope)

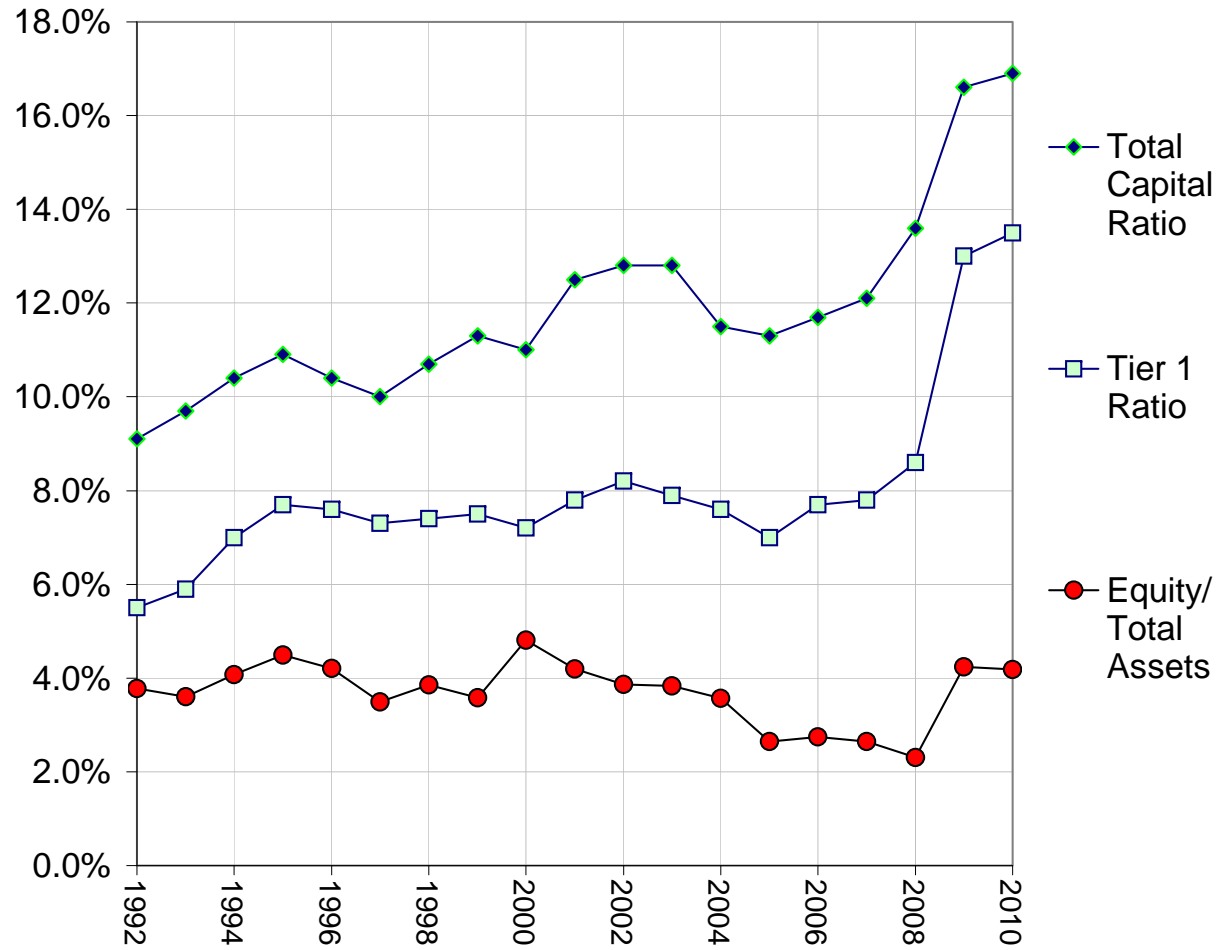


Figure 24: Barclays, capital ratios (Source: Bankscope)

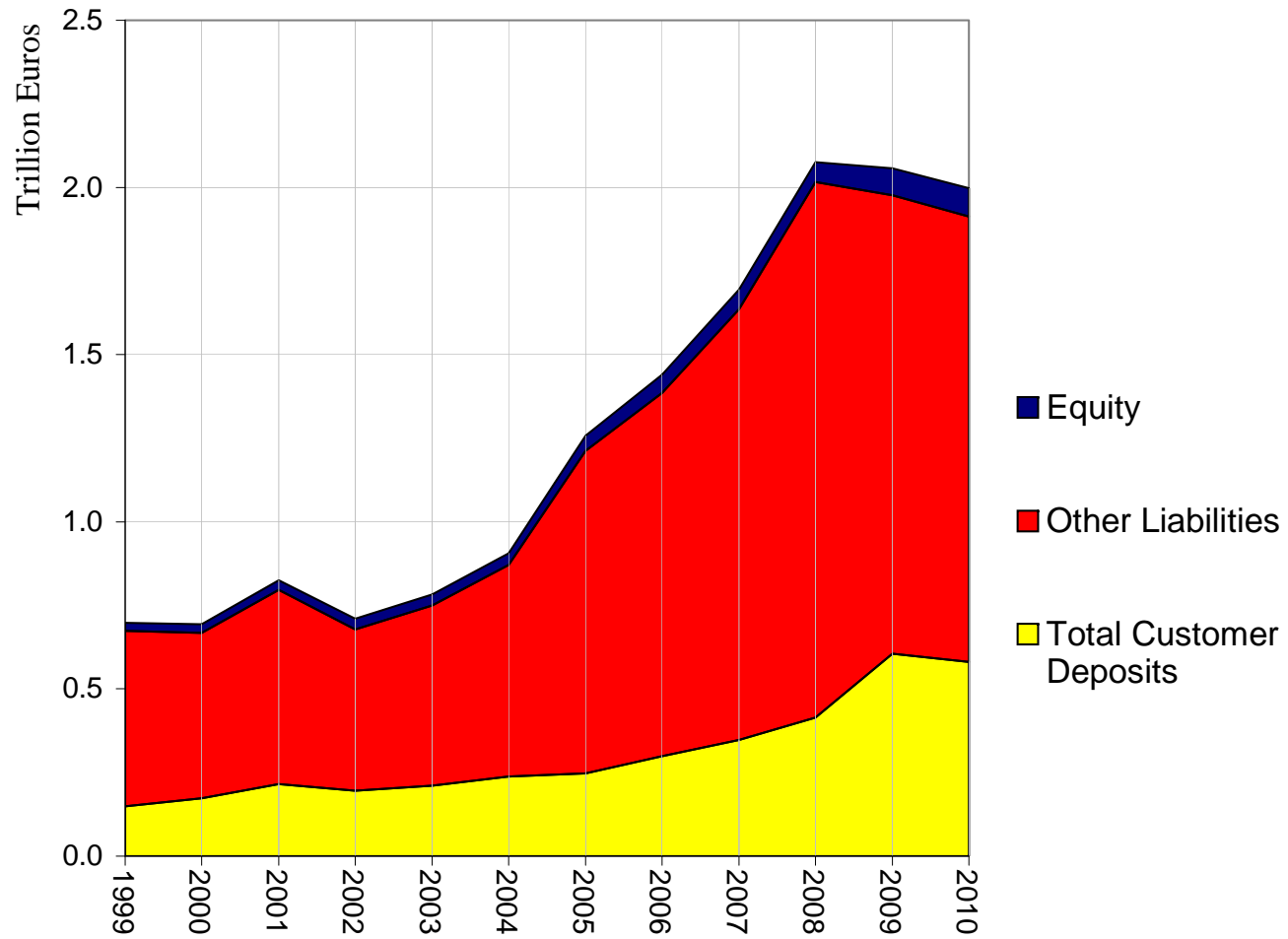


Figure 25: BNP Paribas total liabilities (Source: Bankscope)

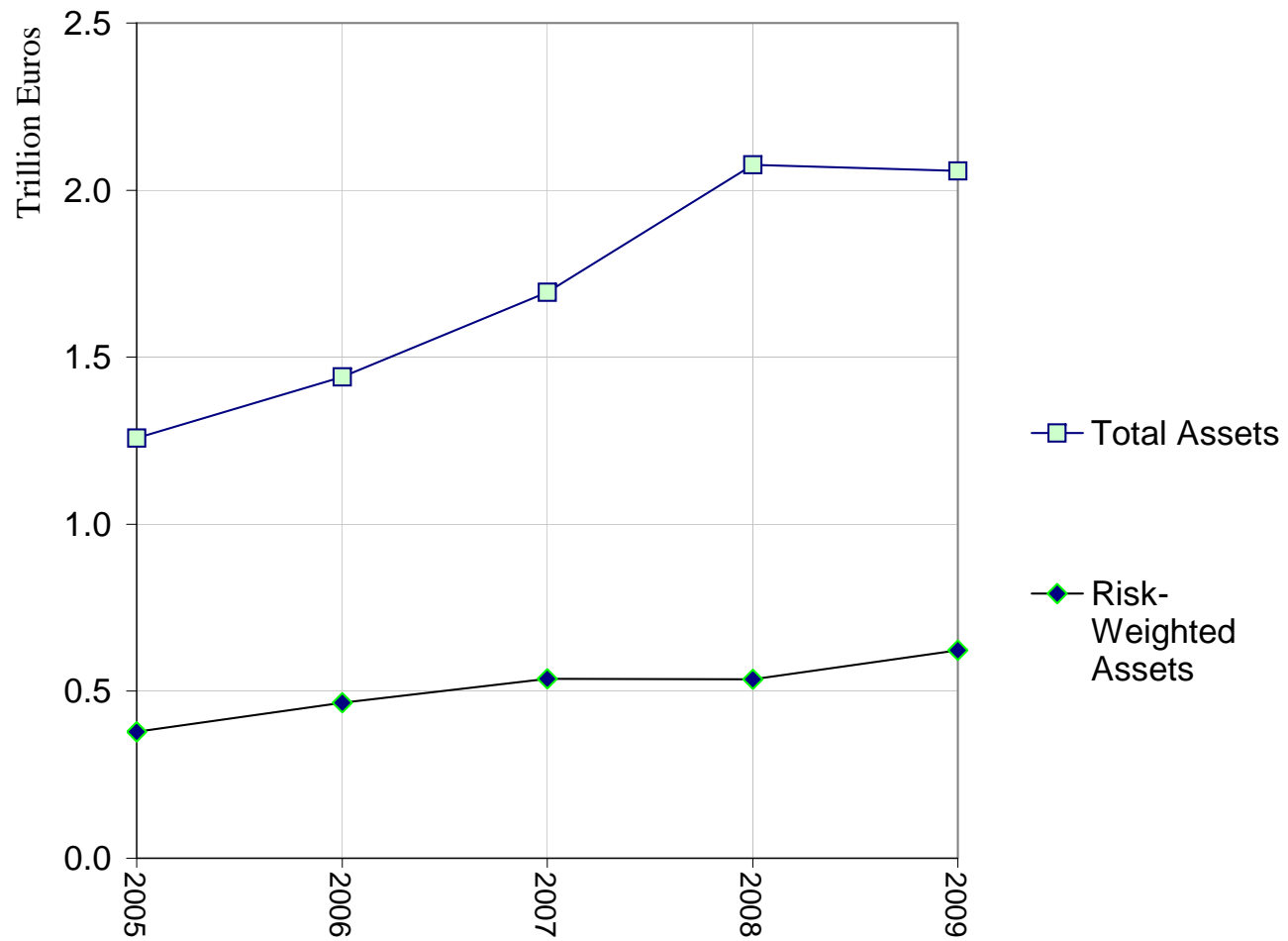


Figure 26: BNP Paribas risk-weighted assets and total assets (Source: Bankscope)

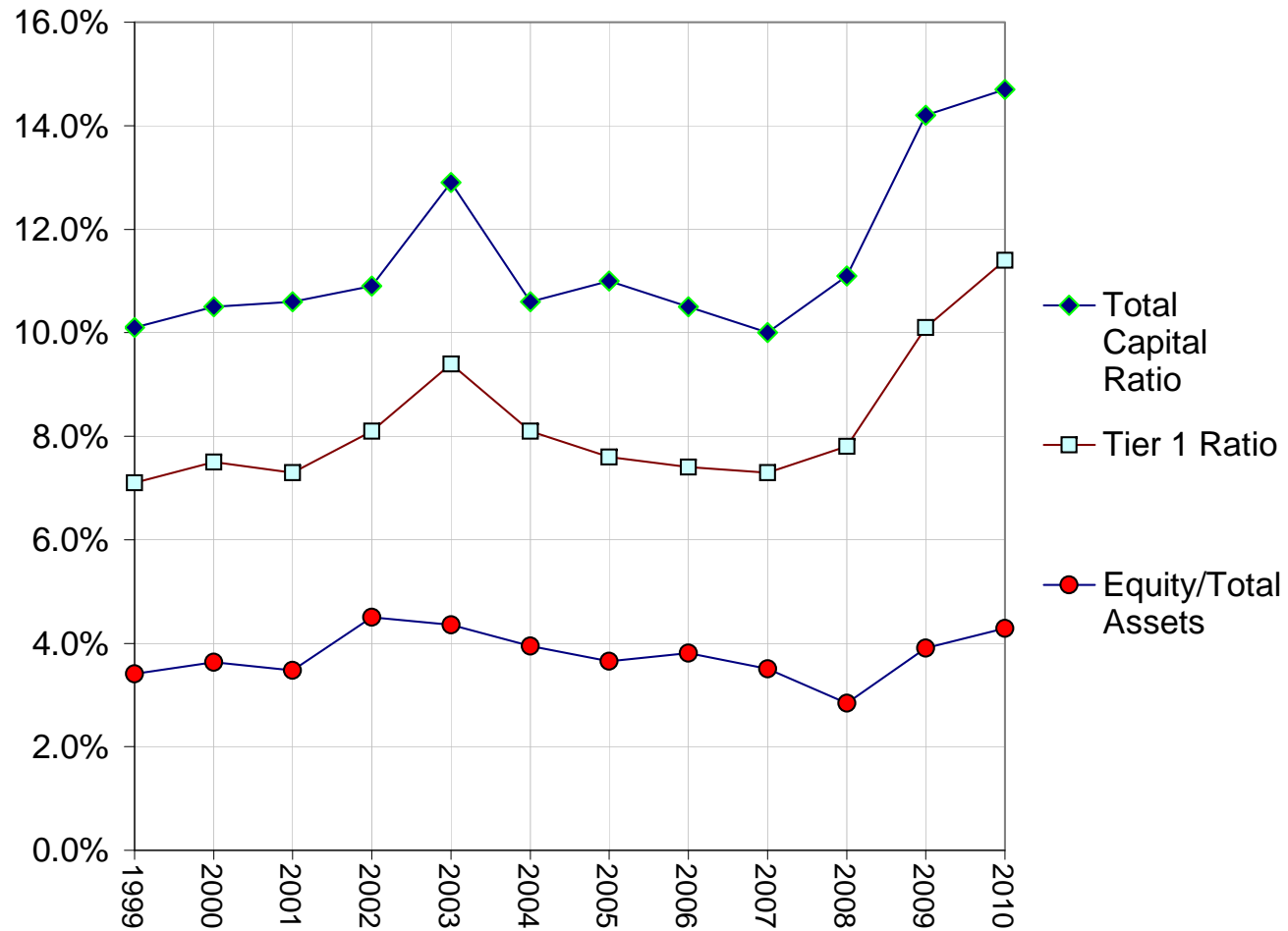


Figure 27: BNP Paribas capital ratios (Source: Bankscope)

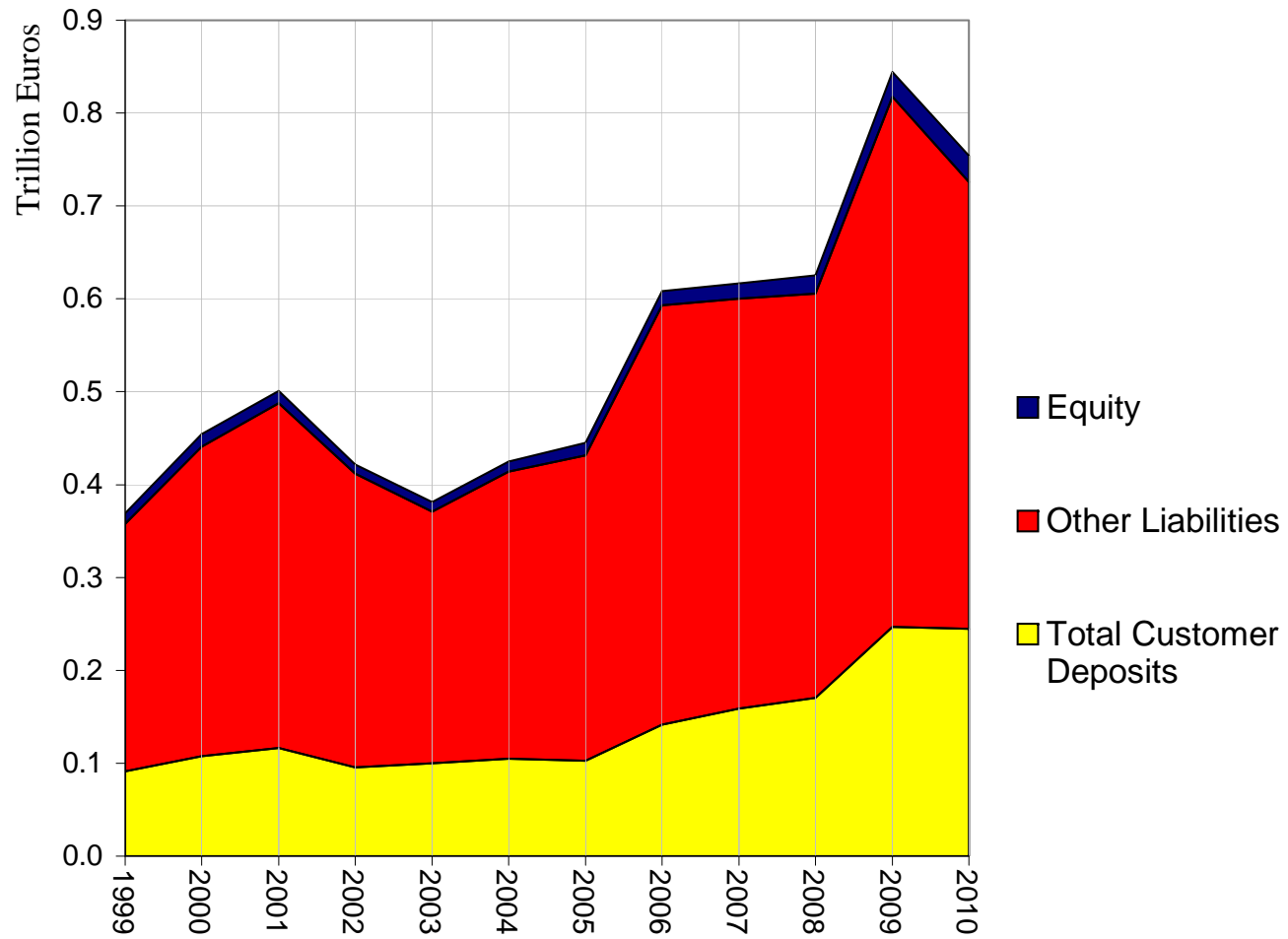


Figure 28: Commerzbank liabilities 1999 - 2010 (Source: Bankscope)

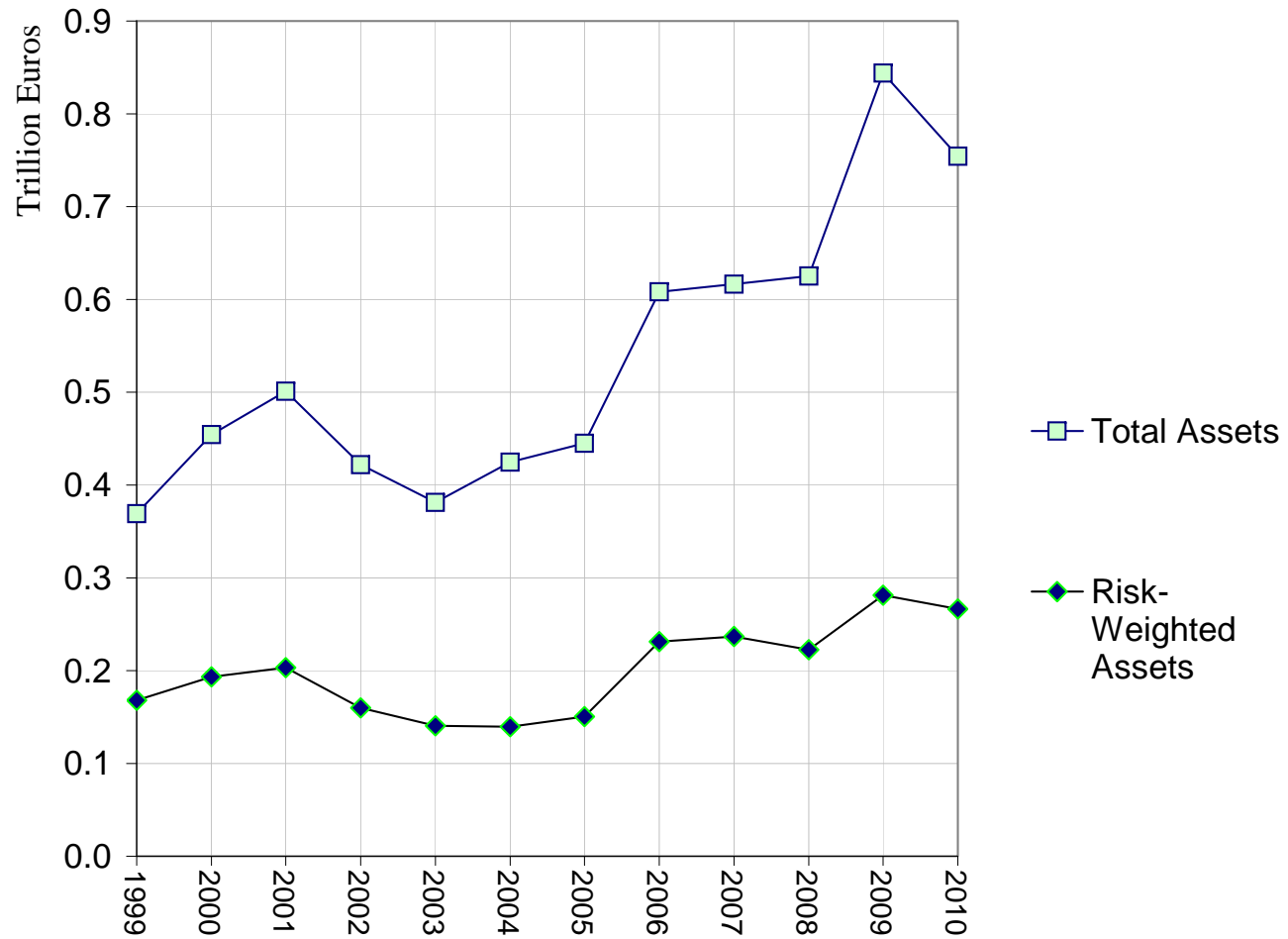


Figure 29: Commerzbank risk-weighted assets and total assets 1999 - 2010
 (Source: Bankscope)

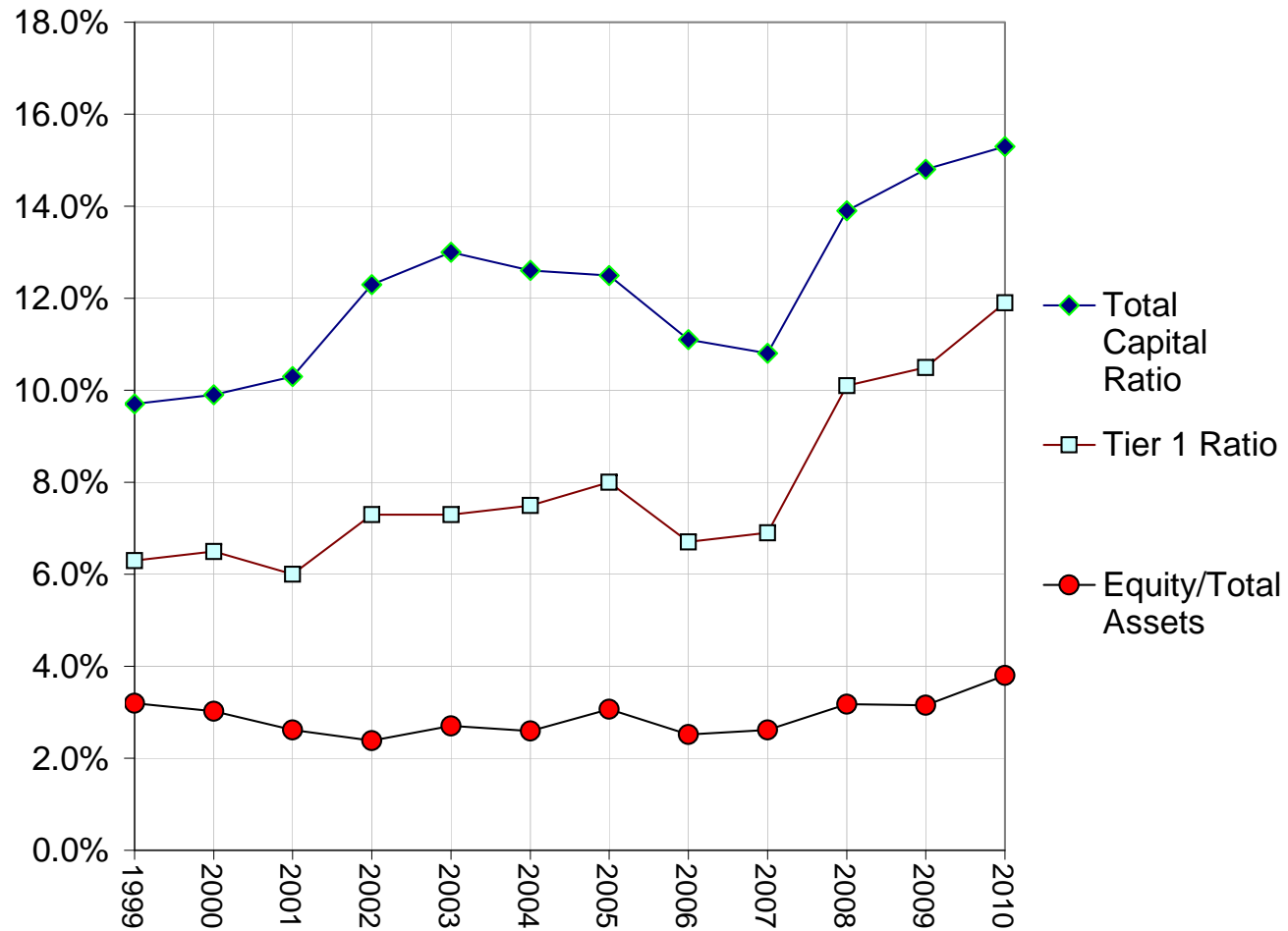


Figure 30: Commerzbank capital ratios 1999 - 2010 (Source: Bankscope)

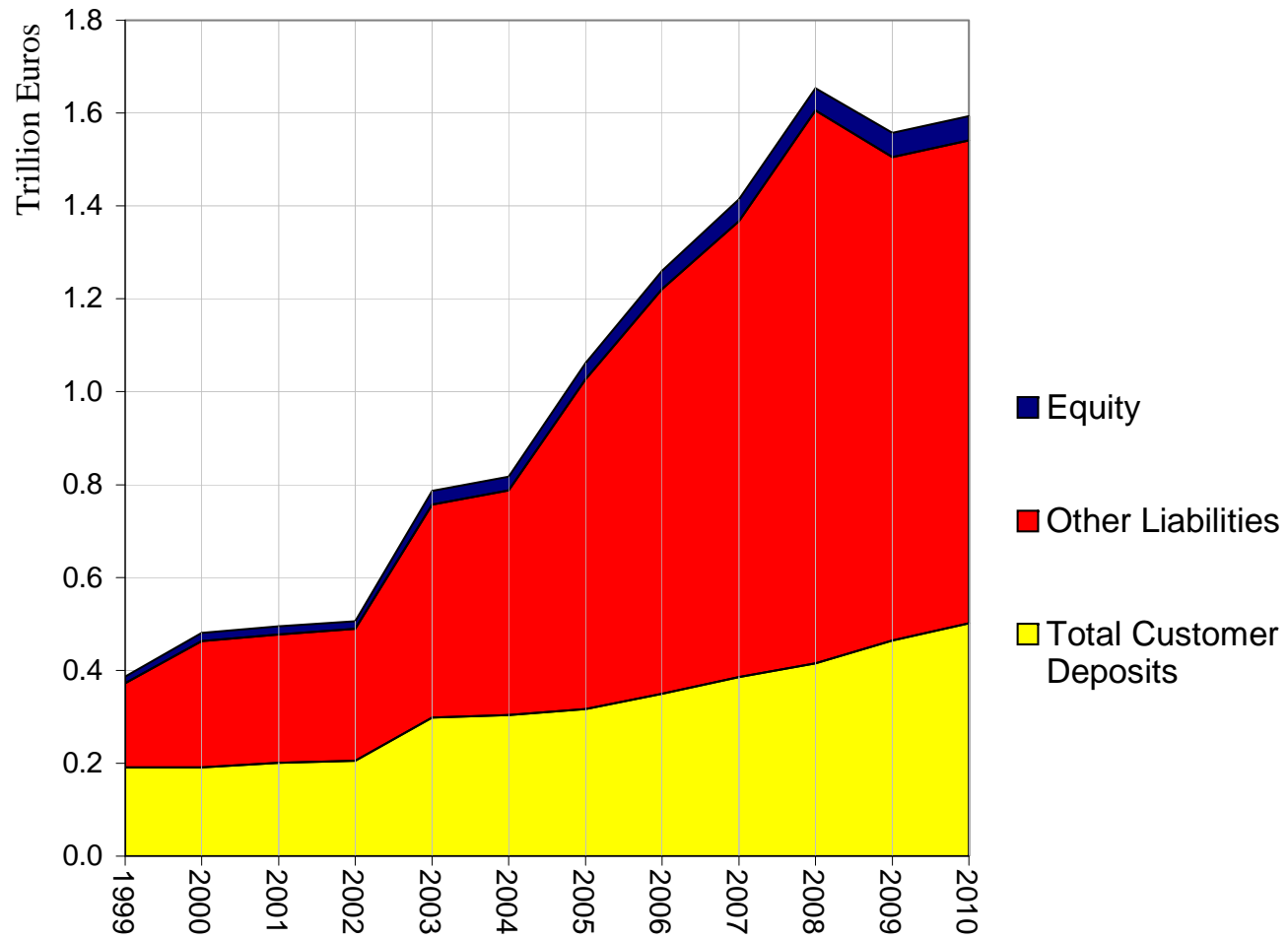


Figure 31: Credit Agricole liabilities 1999 - 2010 (Source: Bankscope)

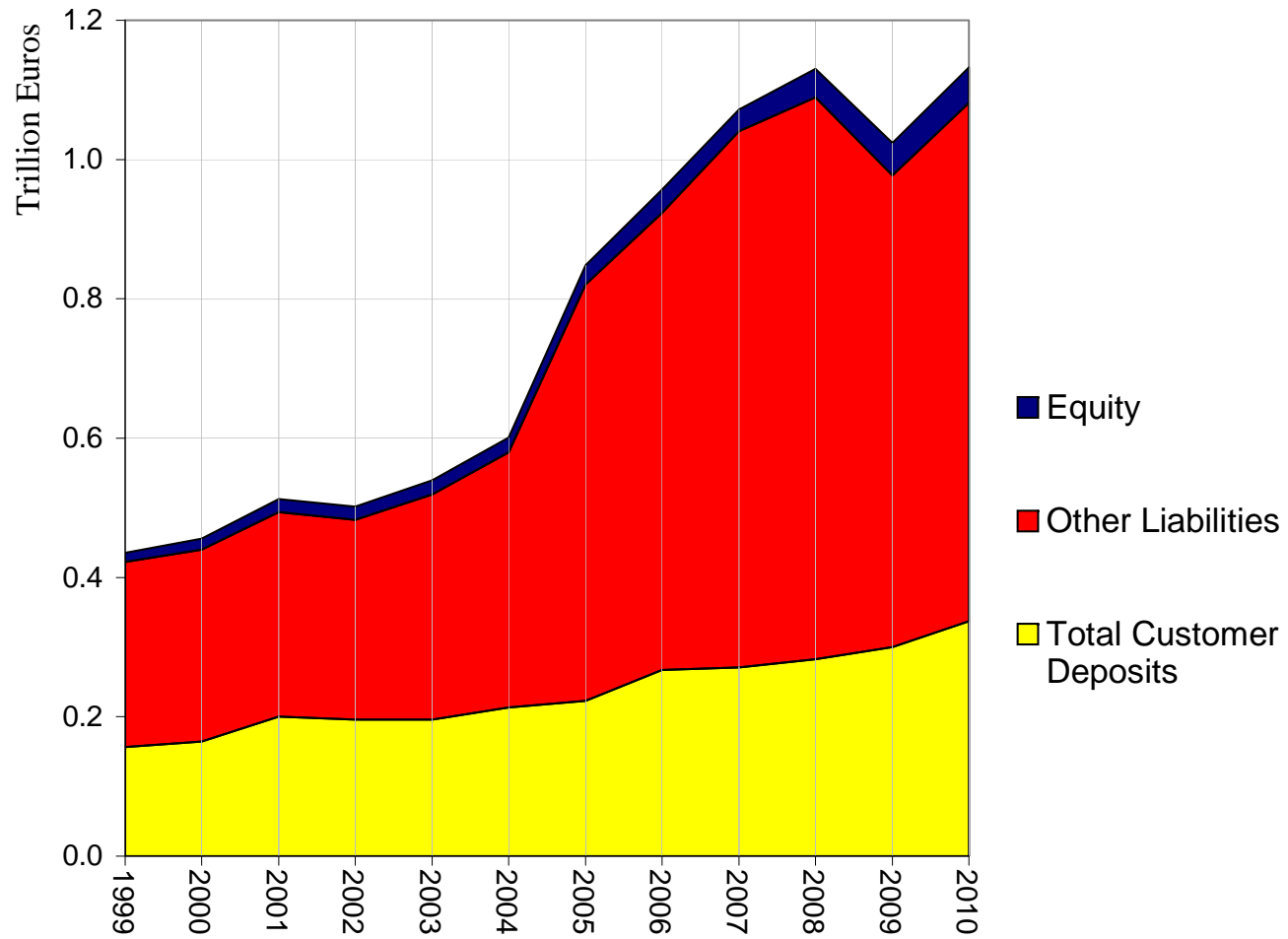


Figure 32: Société Générale liabilities 1999 - 2010 (Source: Bankscope)

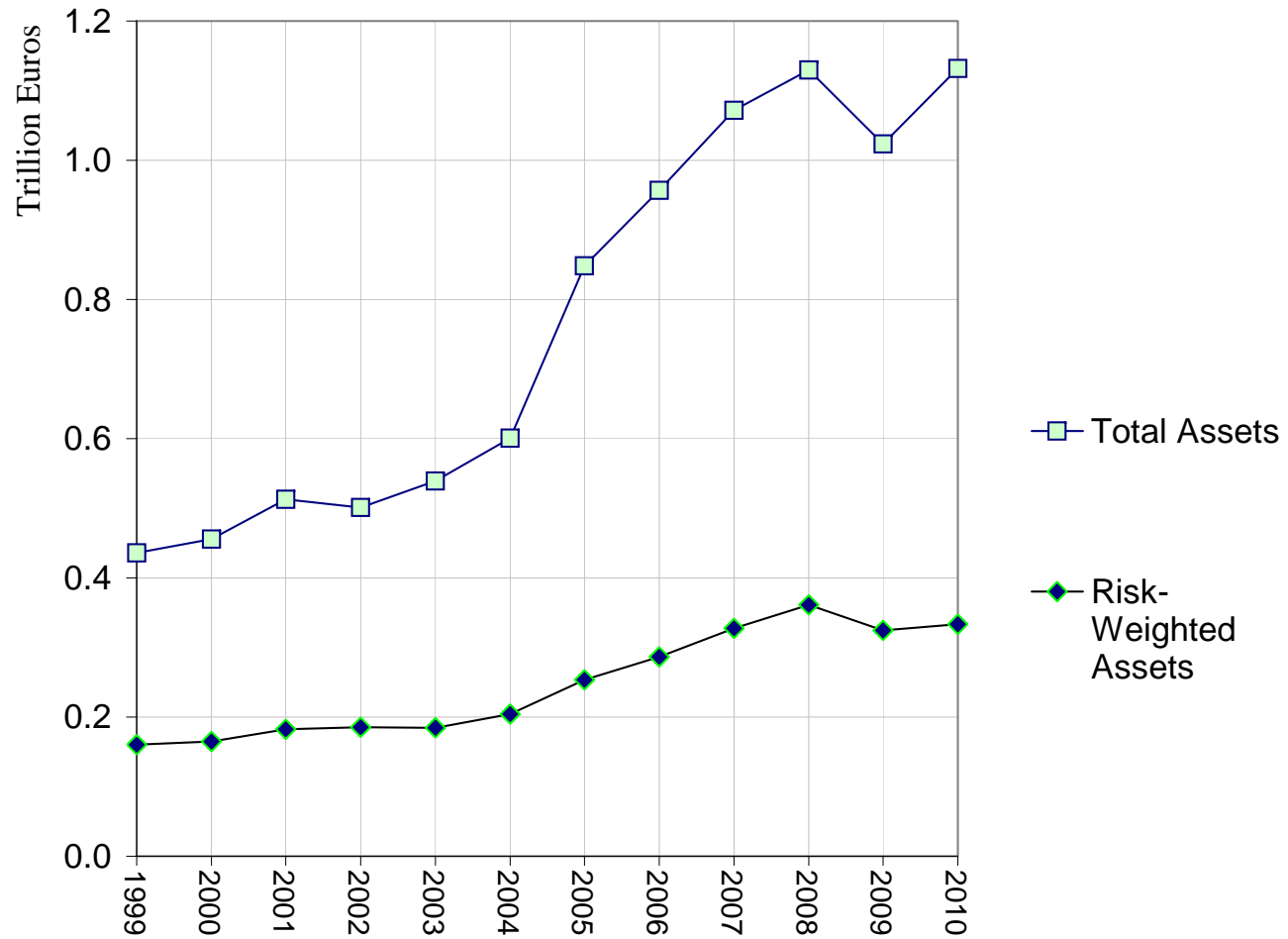


Figure 33: Société Générale risk-weighted assets and total assets (1999 - 2010) (Source: Bankscope)

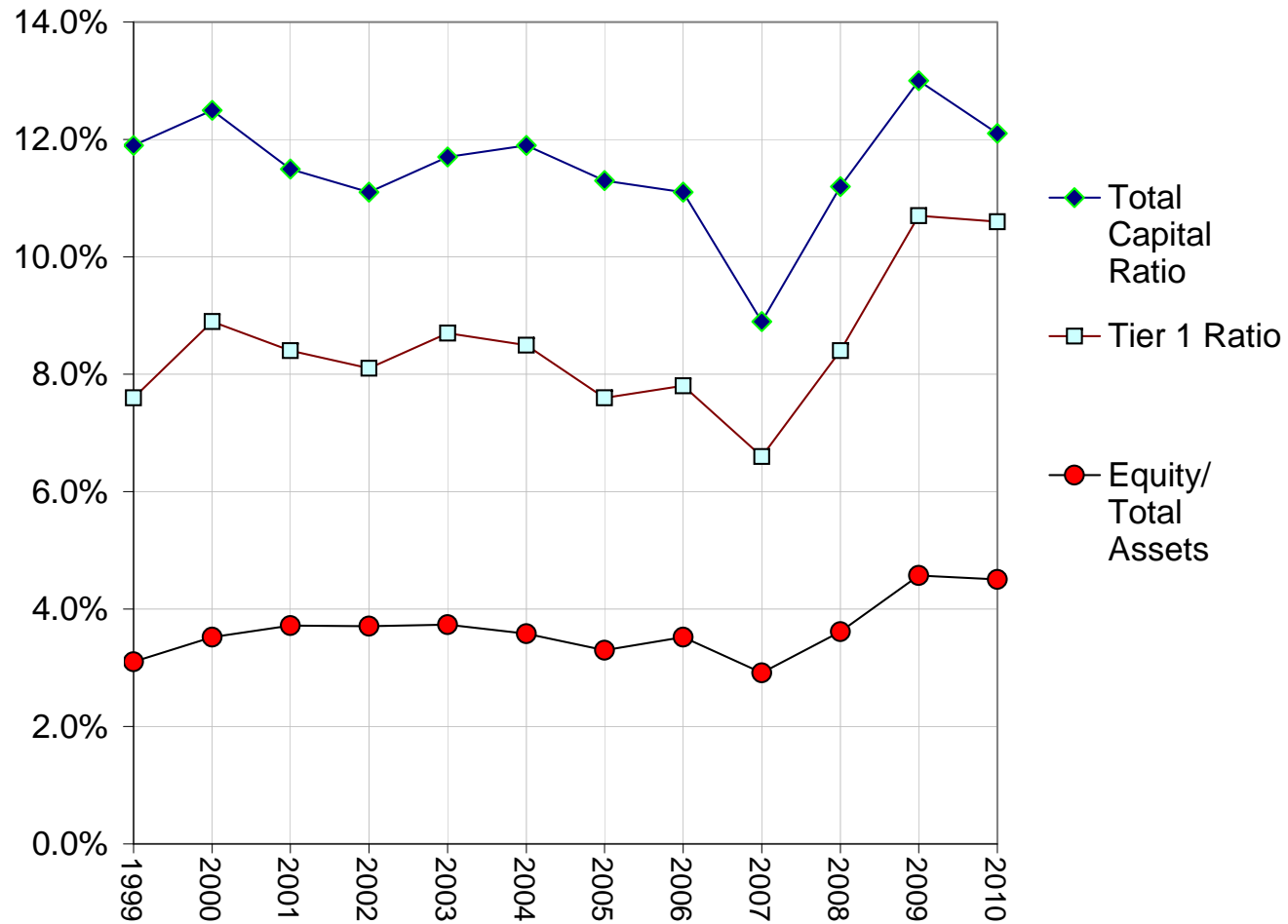


Figure 34: Société Générale capital ratios 1999 - 2010 (Source: Bankscope)

Implications for Current Conjuncture in Europe

- Europe has a **twin crisis**, combining **banking crisis** with **sovereign debt crisis**
 - Emerging economy crises of 1990s were **twin crises**, combining **banking crisis** with **currency crisis**
- Deleveraging by European banks will impact not only eurozone, but also
 - US shadow banking system
 - Capital flows to emerging economies (see below)
 - Emerging Europe, especially

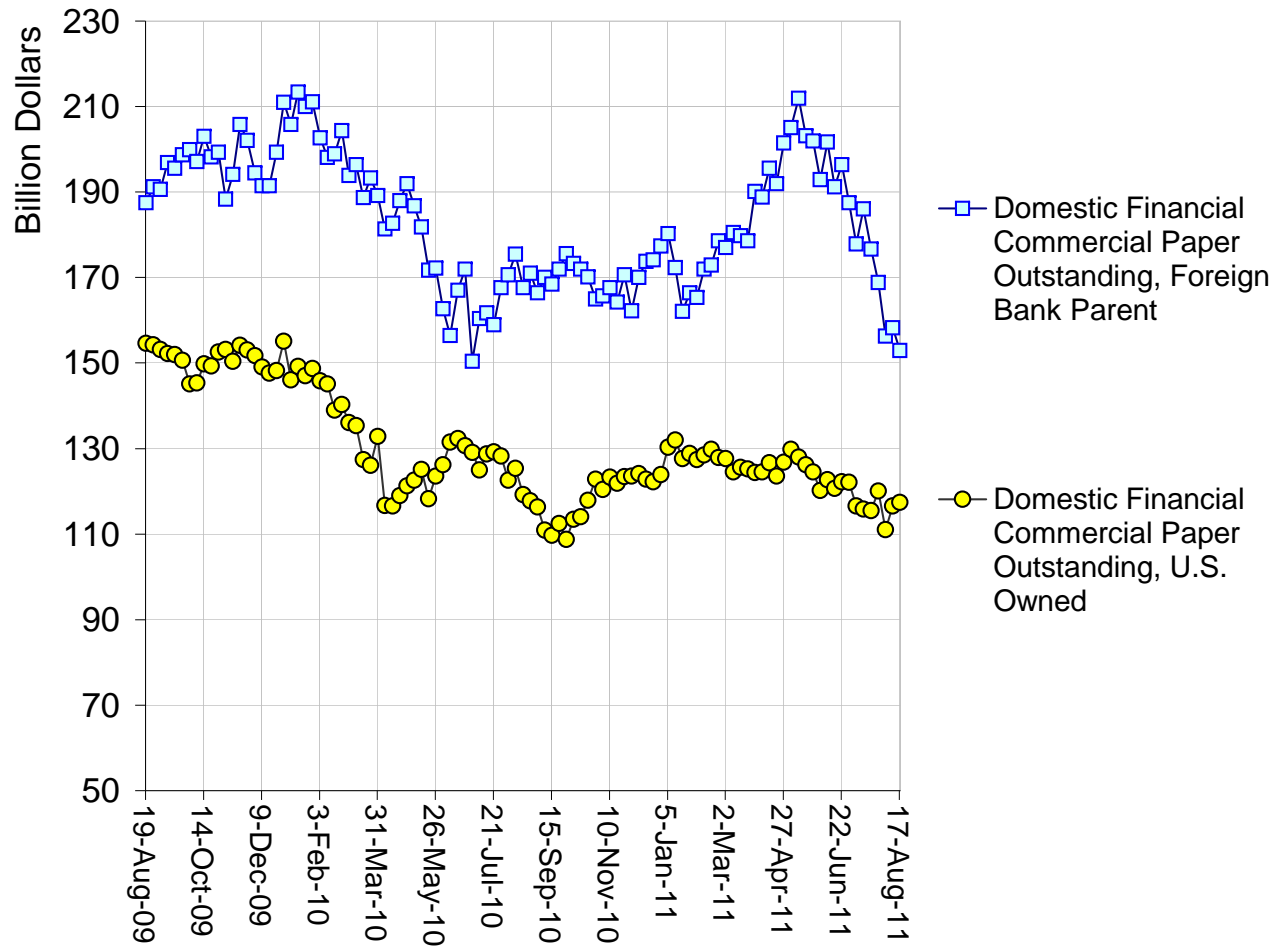
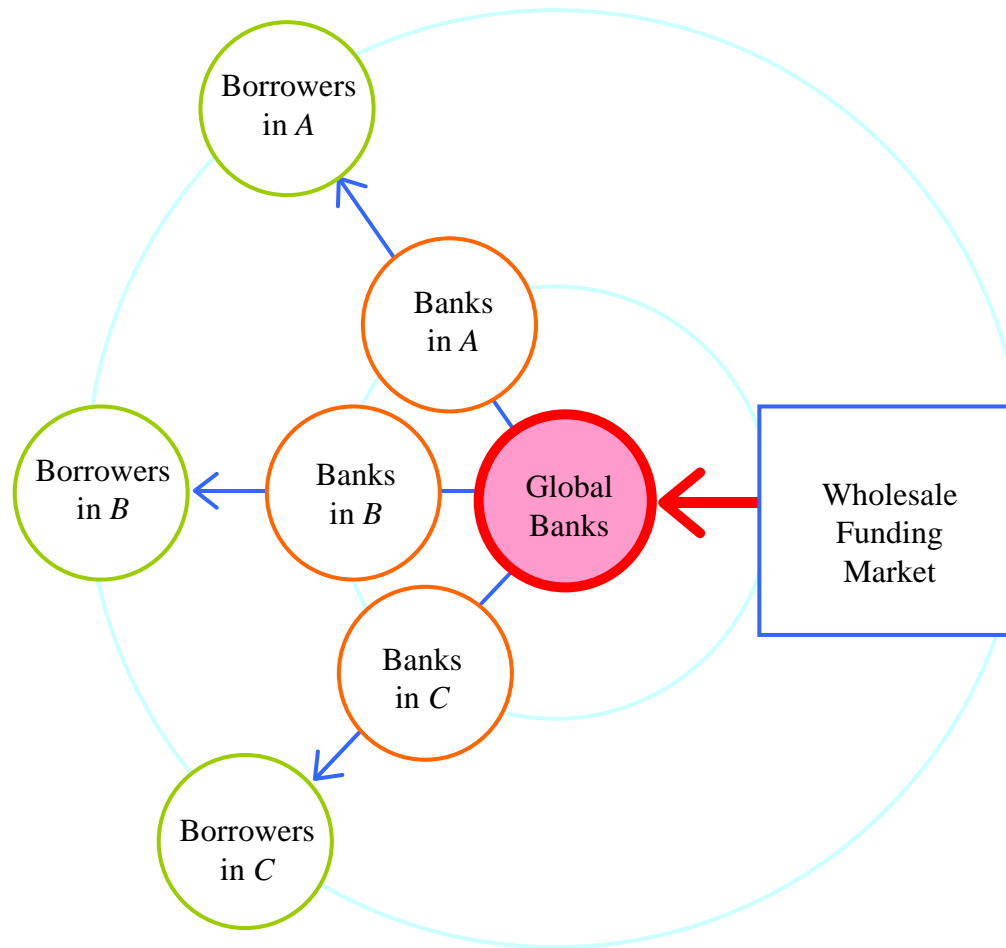
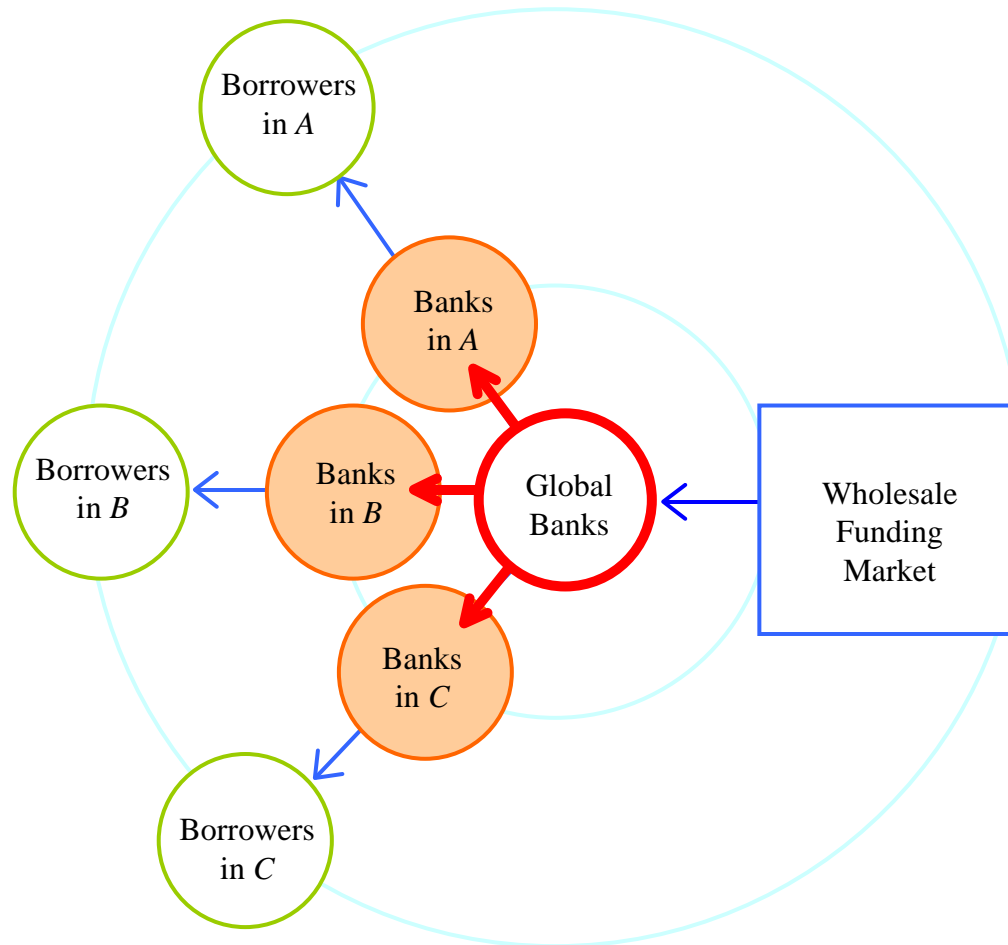


Figure 35: US domestic financial commercial paper (CP) amounts outstanding (Source: Federal Reserve, weekly series on CP)

Consequences for Emerging Economies





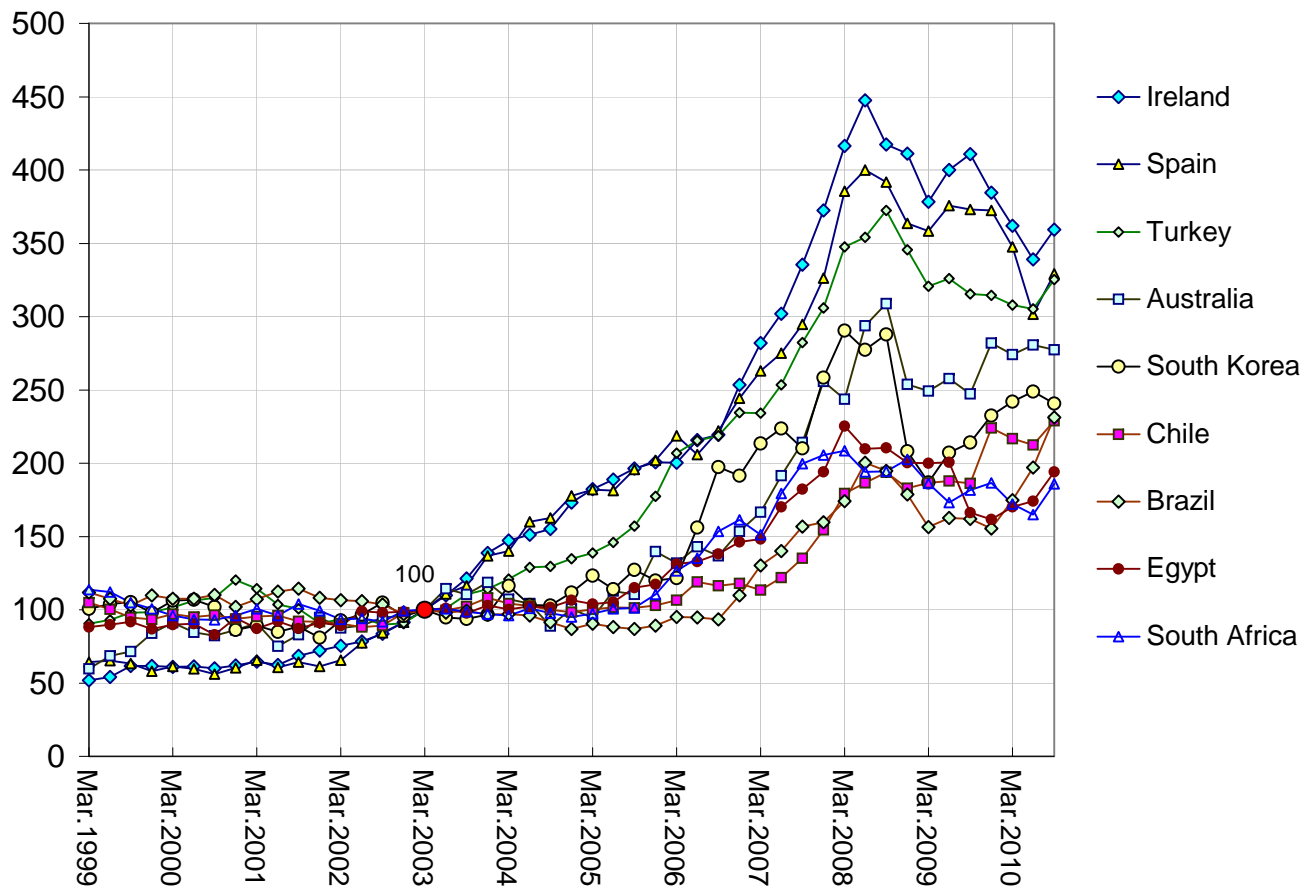


Figure 36: External claims (loans and deposits) of BIS reporting banks on counterparties listed on right (Source: BIS locational banking statistics Table 7A)

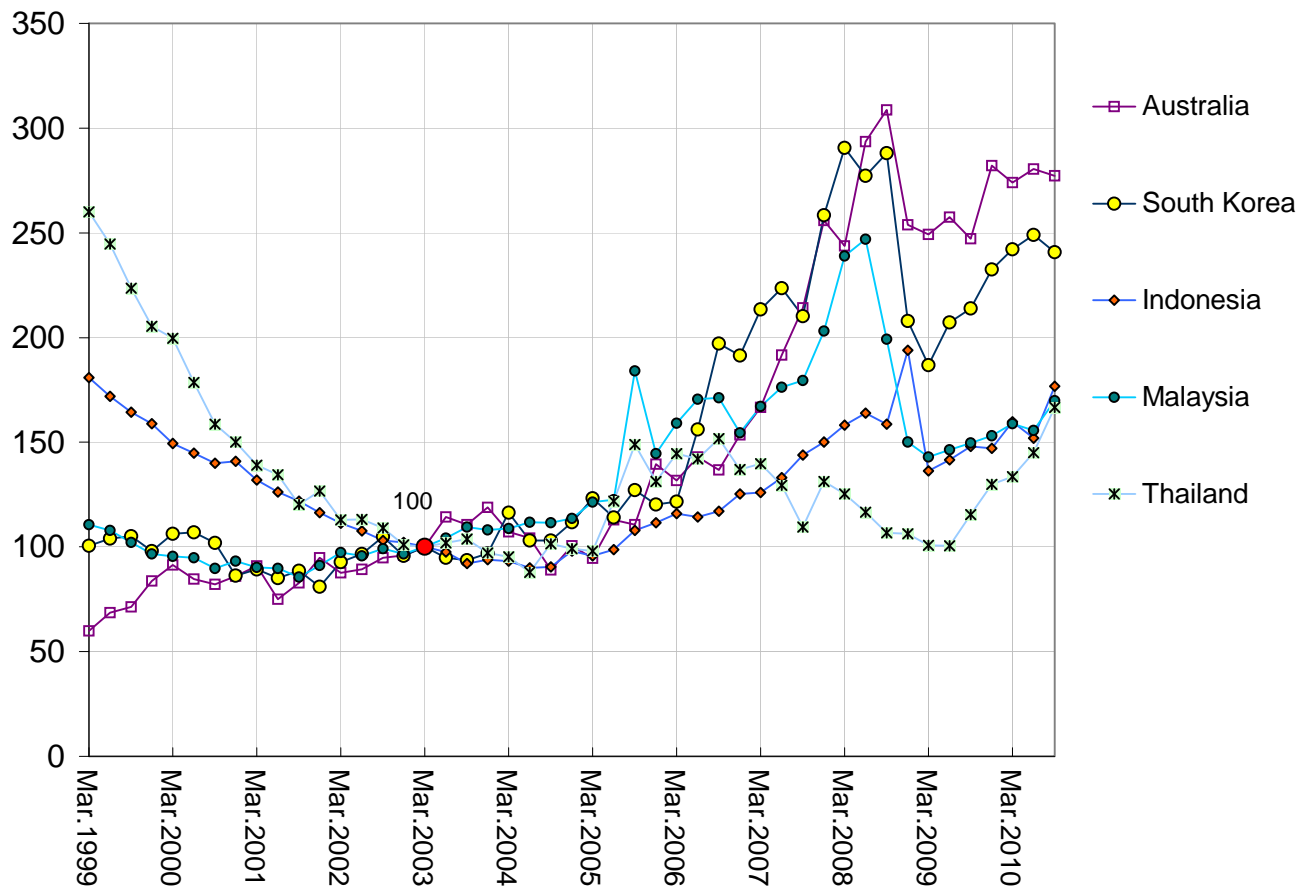


Figure 37: External claims (loans and deposits) of BIS reporting banks on counterparties listed on right (Source: BIS locational banking statistics Table 7A)

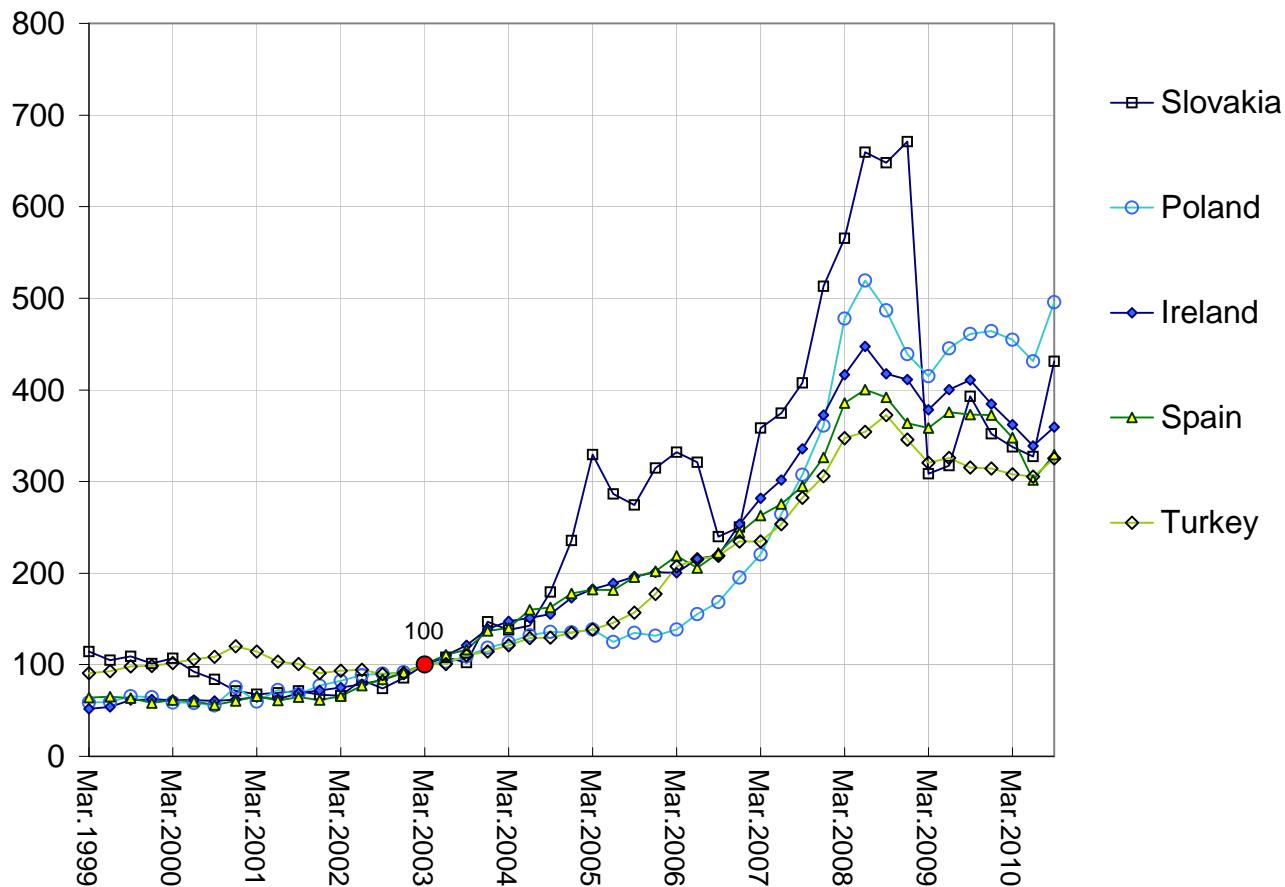


Figure 38: External claims (loans and deposits) of BIS reporting banks on counterparties listed on right (Source: BIS locational banking statistics Table 7A)

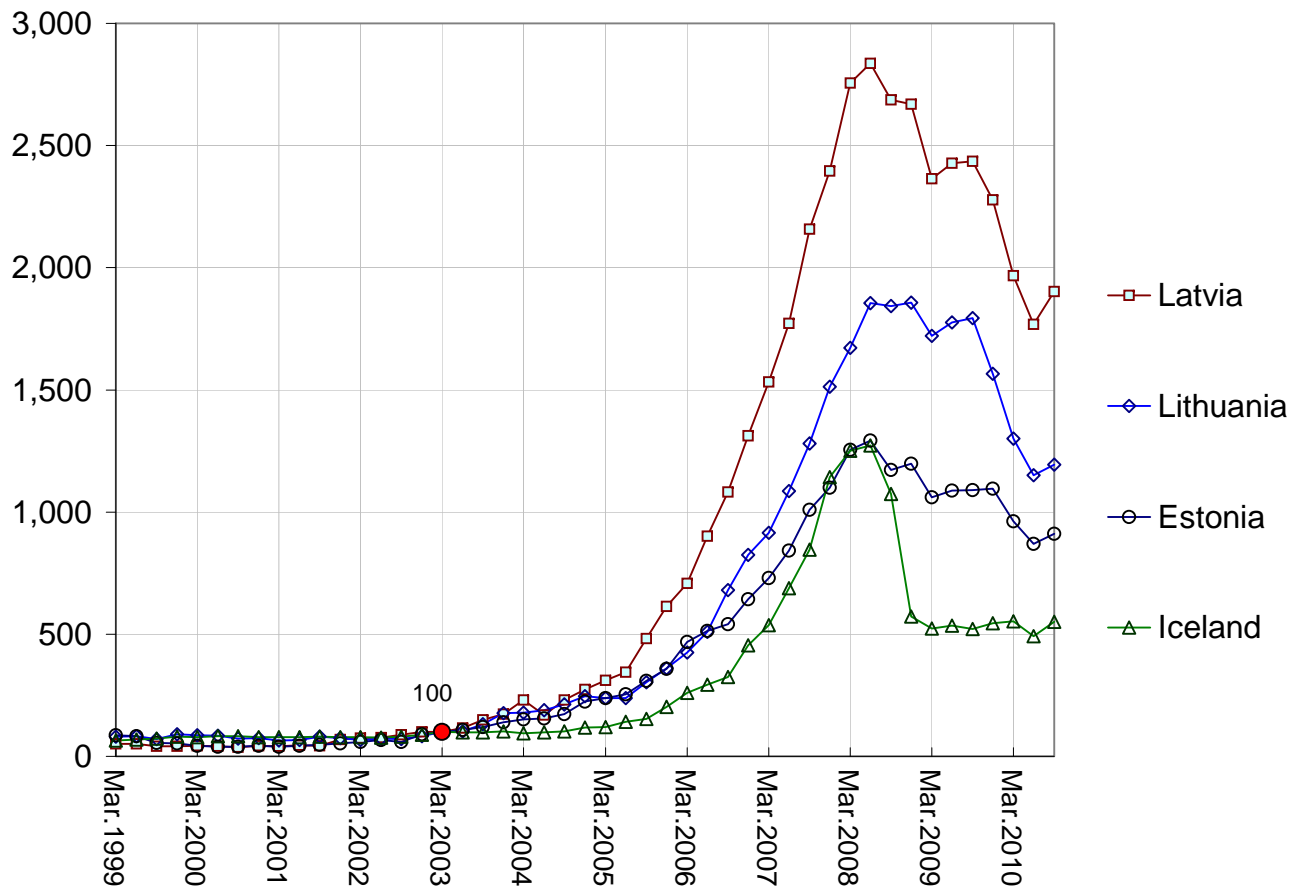


Figure 39: External claims (loans and deposits) of BIS reporting banks on counterparties listed on right (Source: BIS locational banking statistics Table 7A)

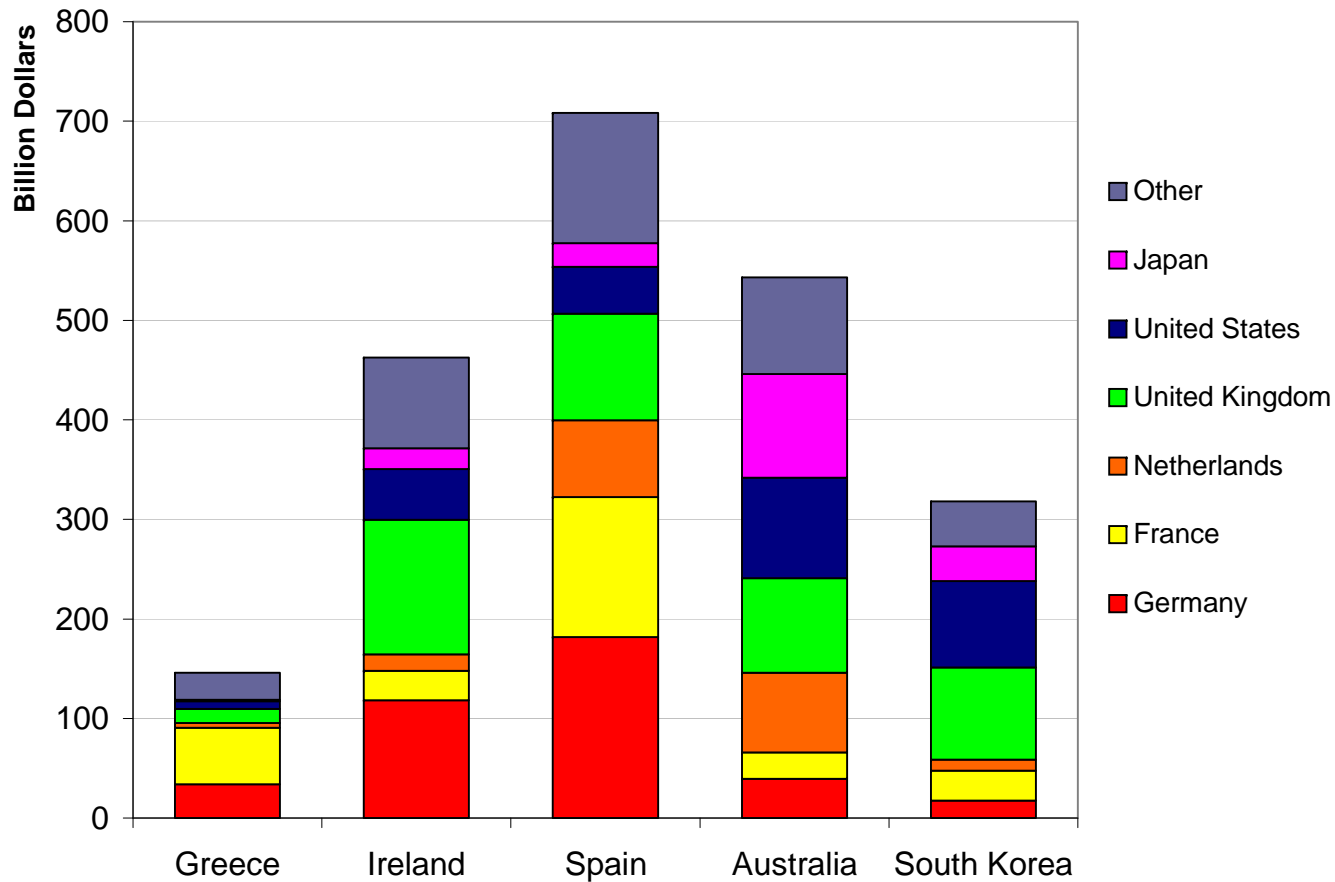


Figure 40: International claims of BIS reporting banks on counterparties in countries listed on right (Dec 2010) (Source: BIS consolidated banking statistics Table 9D)

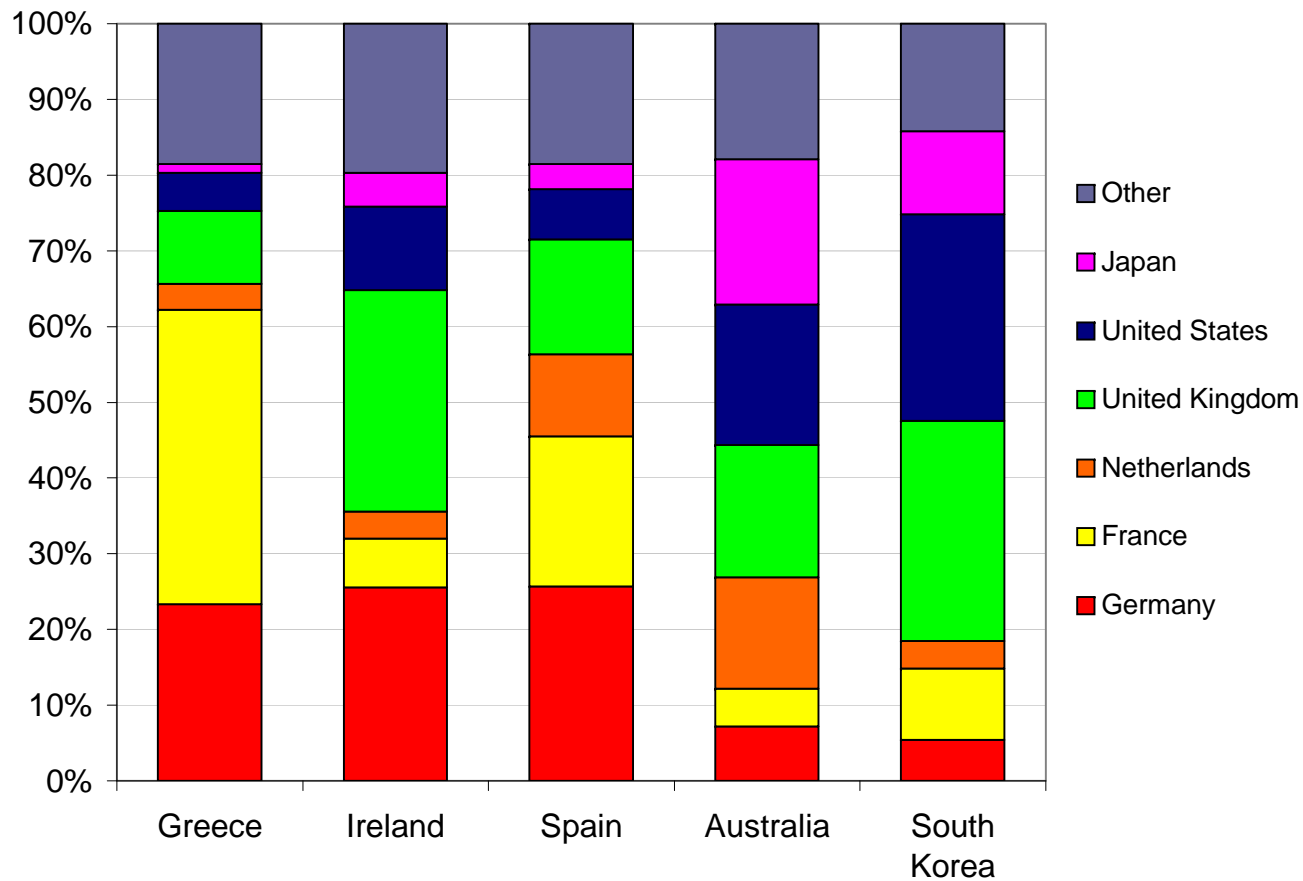


Figure 41: International claims (by percent) of BIS reporting banks on counterparties in countries listed on right (Dec 2010) (Source: BIS consolidated banking statistics Table 9D)

Claims of European Banks on Counterparties in Korea

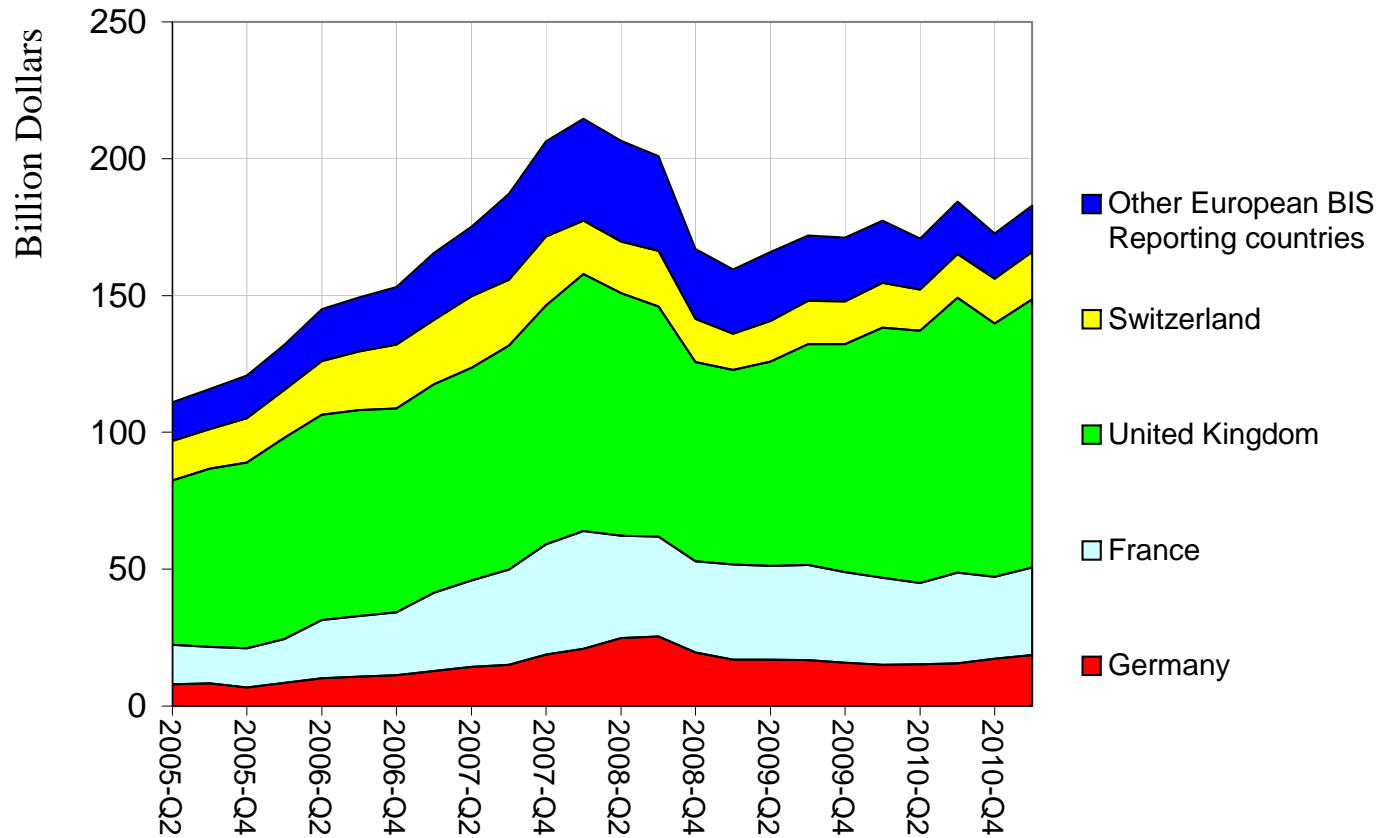


Figure 42: International claims of European BIS-reporting banks on counterparties in Korea (Source: BIS consolidated banking statistics Table 9D)

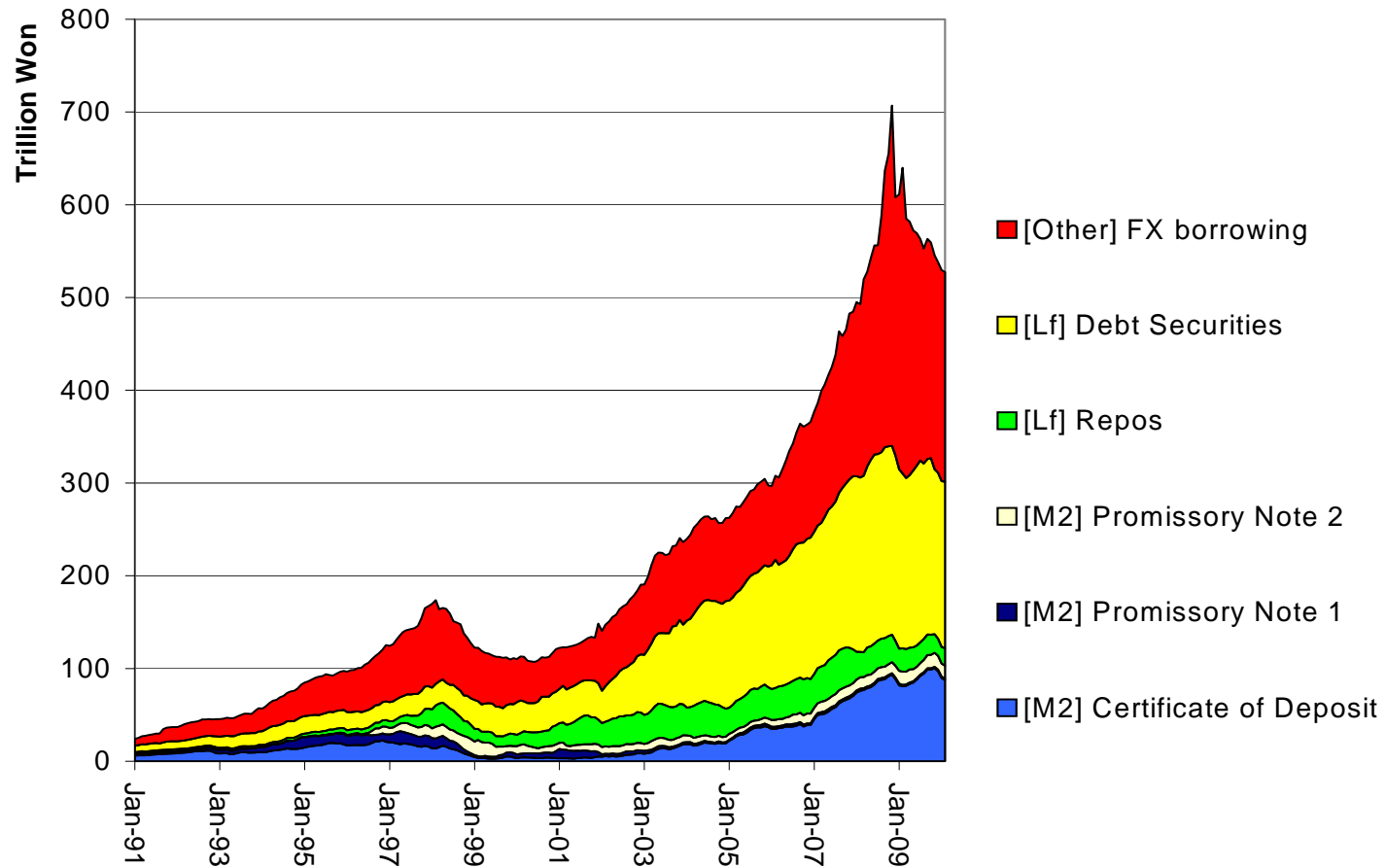


Figure 43: Non-core liabilities of Korean banks (Source: Shin and Shin (2010), data from Bank of Korea)

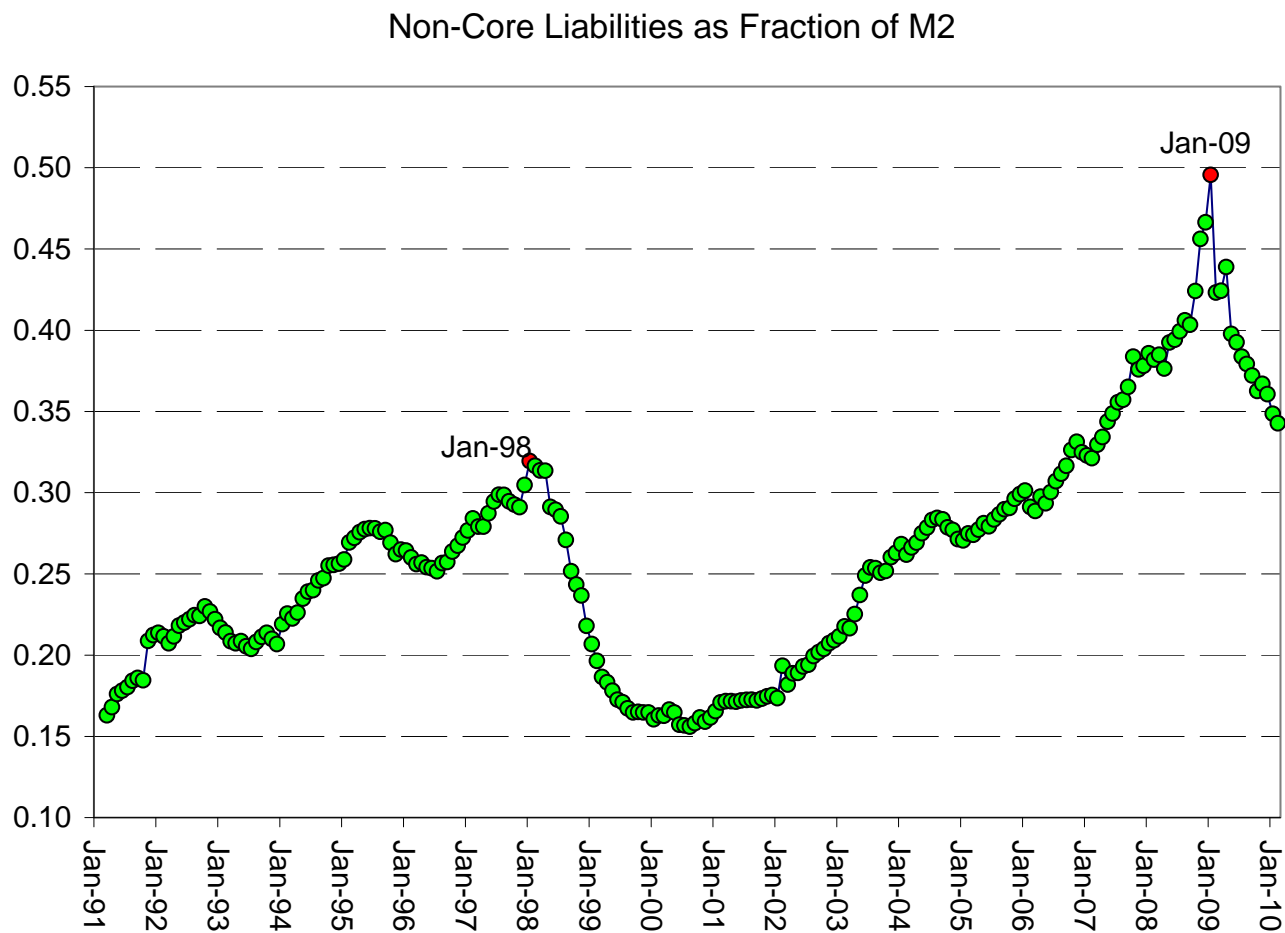


Figure 44: Non-core liabilities of Korean banks as proportion of M2 (Source: Shin and Shin (2010), data from Bank of Korea)

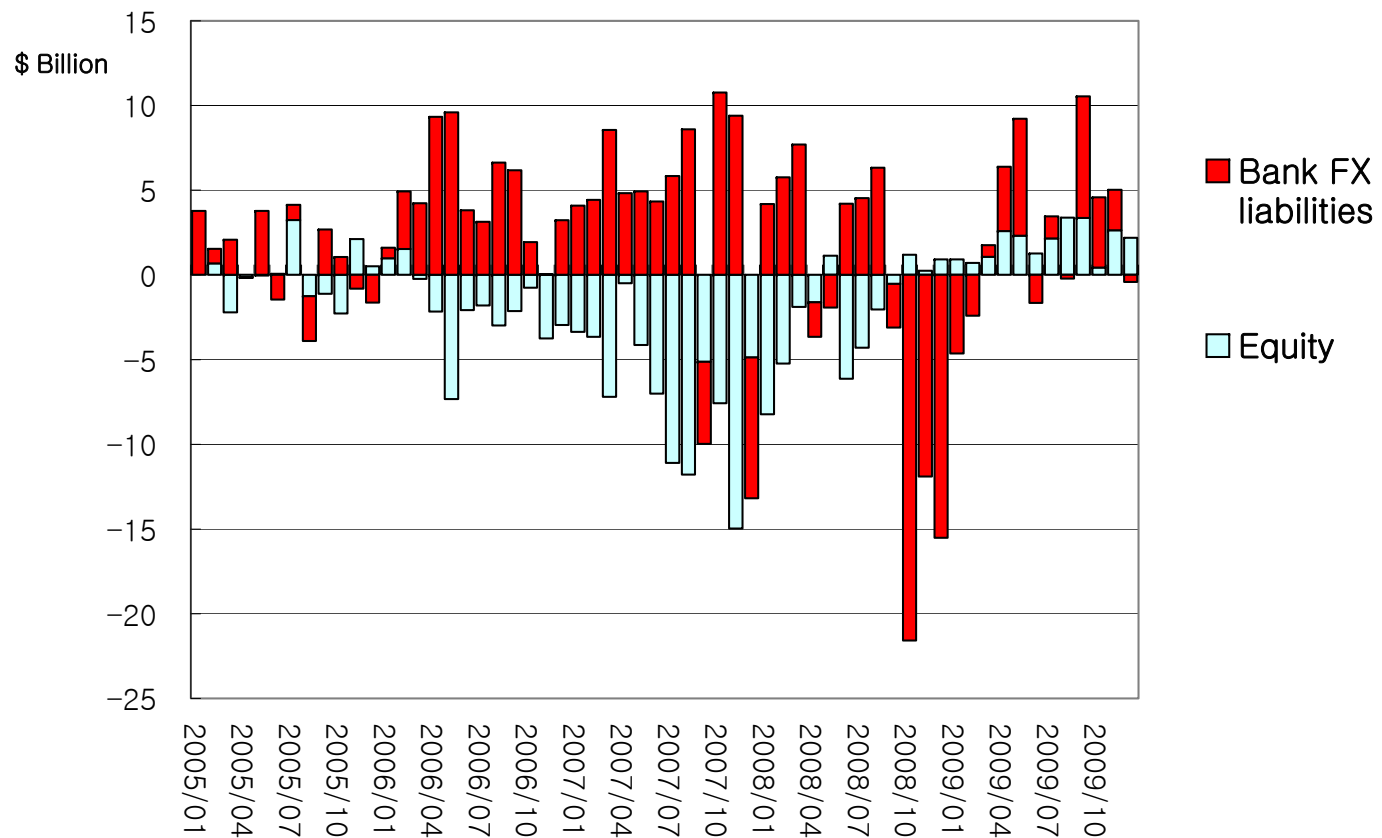


Figure 45: Capital flows for Korea in equity and banking sector (Source: Shin and Shin (2010), data from Bank of Korea)

	Policy Tool	Advantages	Drawbacks
Asset Side Tools	Loan-to-Value (LTV) cap	Low administrative burden	Ineffective during rapid housing boom
	Debt service-to-Income (DTI) cap	Ties loan growth to wage growth	High administrative capacity needed for data on income
	Loan-to-Deposit Caps	Low administrative burden	Distorts bank funding Not applicable to foreign banks
	Reserve Requirement	Low administrative burden	Ineffective with low interest rates, burdens central bank
Liabilities Side Tools	Levy on non-core bank liabilities	Price based measure. Acts on broad liability aggregates	Needs legislation. Cannot narrowly target FX vulnerability
	Levy on FX-denominated bank liabilities	Price-based measure Enhances monetary policy Counters FX risk	Needs legislation Narrow base of levy
Bank Capital-Oriented Tools	Countercyclical capital requirements	Conforms to Basel III	Difficulty in calibration Level playing field issues
	Forward-looking provisioning	Modifies bank incentives	Objections from accounting standard setters
	Leverage cap	Modifies bank incentives	Not price based Open to circumvention Vulnerable to bank FDI

Figure 46: Taxonomy of macroprudential tools

		Financial Liberalization/Openness	
		High	Medium/Low
Monetary policy autonomy	None	Asset Side Tools (LTV, DTI), Bank Capital-Oriented Policies (dynamic provisioning, leverage caps, countercyclical capital requirements)	Asset Side Tools (LTV, DTI, loan-to-deposit caps)
	Low/Medium	Asset Side Tools (LTV, DTI, loan-to-deposit cap), Monetary policy combined with Liabilities Side Tools (non-core liabilities levy), Bank Capital-Oriented Tools (leverage cap)	Asset Side Tools (LTV, DTI, loan-to-deposit cap), Monetary policy combined with Liabilities Side Tools (non-core liabilities levy)
	High	Monetary policy, Bank Capital-Oriented Tools (dynamic provisioning, leverage caps, countercyclical capital requirements)	Monetary policy, Reserve requirements, Bank Capital-Oriented Tools (dynamic provisioning, leverage caps, countercyclical capital requirements)

Figure 47: Macroprudential policy priorities depending on openness and monetary policy autonomy