

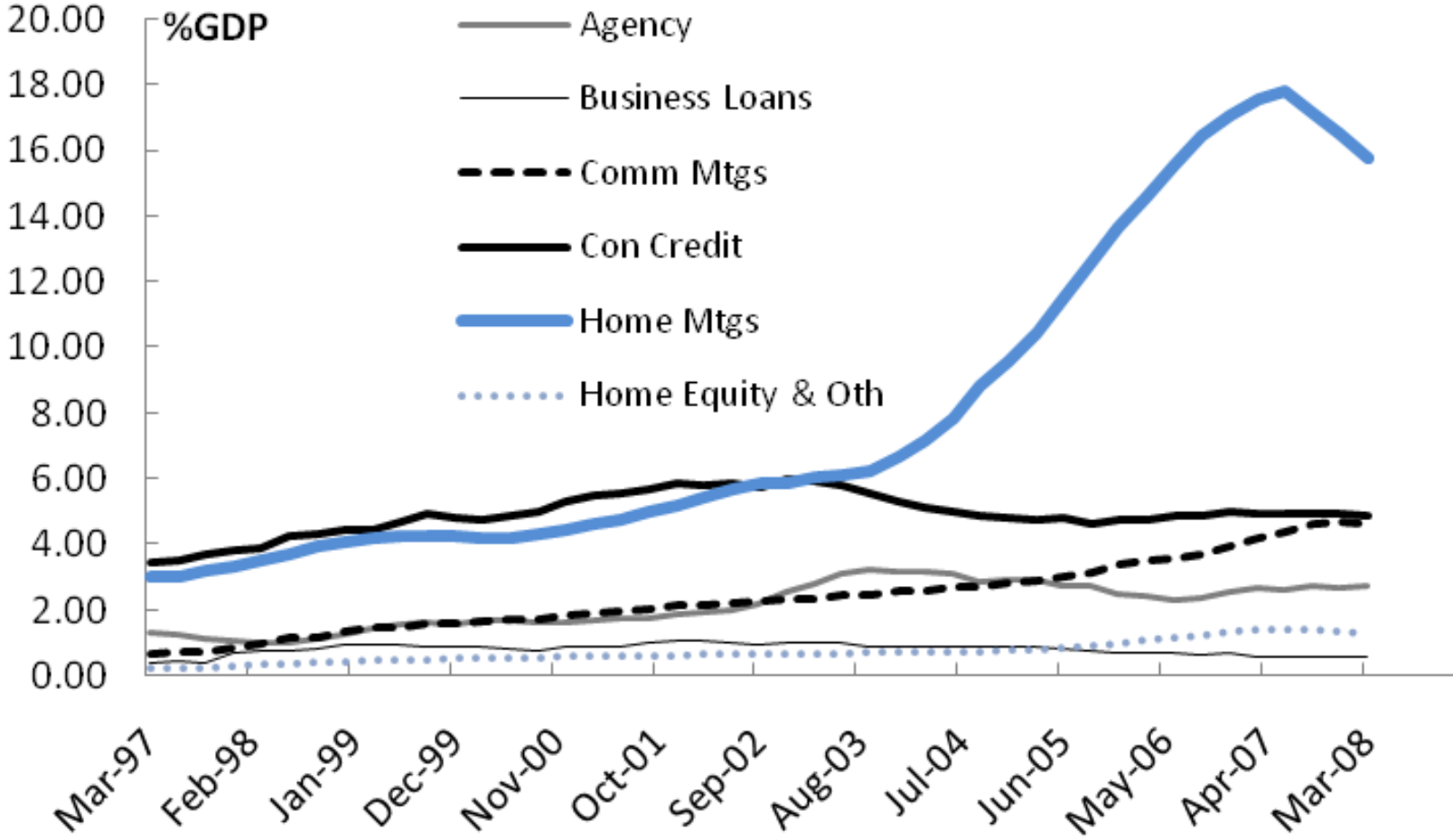


# The Financial Crisis: Causal Factors and Tax

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Fig. 1: RMBS versus Other Securitised Assets (% GDP)



Source: Federal Reserve, Datasteam, OECD.

## Fig. 2: Four 2004 Catalysts

- American Dream mortgage policy signed into law.
- Basel II accord published in the middle of the year.
- SEC regulatory changes for Investment Banks.
- OFHEO Fannie Mae and Freddie Mac controls imposed.

# Fig. 3: Basel I & Basel II Risk Weights & Commentary

Risk Weights Under Basel I and Basel II (Pillar I), %						
SECURITY	BASEL I	BASEL II Simplified Standardised	BASEL II Standardised based on External Ratings	BASEL II Advanced: Internal Ratings Based (IRB)		Basel II Advanced IRB
				2004-05 QIS 4 Av % Chg in Portf. MRC	2004-05 QIS 4 Median % Chg in Portf. MRC	
<b>Most Government/central bank</b>	0	0		0	0	<p>Comes close to letting banks set their own <b>Pillar 1</b> capital, with supervisory oversight. Risk weights depend on internal estimates of a loan's probability of default; loss-given-default; exposure to loss. These are based on the banks' own complex risk models, relying on subjective inputs and often on unobservable (e.g. OTC illiquid securities) prices.</p> <p><b>Pillar 2</b> provides for supervisory oversight. With stress testing, and guidance from supervisors, banks can be made to hold capital for risks not adequately captured under Pillar 1.</p> <p><b>Pillar 3</b> is disclosure and market discipline which relies on some notion of market efficiency. Rational markets punish poor risk managers.</p>
AAA to AA-			0			
A+ to A-			20			
BBB+ to BBB-			50			
BB+ to B- (& unrated)			100			
Below B-			150			
<b>Other public (supervisors discretion)</b>	0-50	0		0	0	
<b>Claims on MDBs</b>	20	0		-21.9	-29.7	
<b>Most OECD Banks &amp; Securities firms</b>	20	20	<90days	-21.9	-29.7	
AAA to AA-			20	20		
A+ to A-			20	50		
BBB+ to BBB- (&unrated)			20	50		
BB+ to B-			50	100		
Below B-			150	150		
<b>Residential Mortgages-fully secured</b>	50	35	35	-61.4	-72.7	
<b>Retail Lending (consumer)</b>	100	75	75	(-6.5 to -74.3)	(-35.2 to -78.6)	
<b>Corporate &amp; Commercial RE</b>	100	100		(-21.9 to -41.4)	(-29.7 to -52.5)	
AAA to AA-			20			
A+ to A-			50			
BBB+ to BB- (&unrated)			100			
Below BB-			150			

Source: Basel Committee, FDIC, author commentary

# Fig. 4: Assets/Equity %: Banks and IB'

YEAR	CITIGRO UP INC - TOTAL	BANK OF AMERICA CORP -	JPMORG AN CHASE & GROUP -	GOLDMA N SACHS GROUP -	MORGAN STANLEY - TOTAL	MERRILL LYNCH & CO., -	WACHOV IA CORP - TOTAL	LEHMAN BROS HOLDING CO -	WELLS FARGO & MUTUAL - P -	WASHIN GTON MUTUAL - P -	U. S. BANCOR P -
1997	16.55275	12.39921	16.39695	27.29096	21.55982	32.55785	12.07663	33.54079	12.60861	18.26706	10.98536
1998	15.60495	12.13706	13.76712	34.05075	22.4938	29.5898	13.82186	28.3196	9.753596	17.71043	11.04595
1999	14.42936	12.80851	16.80411	24.69108	21.56853	25.62653	15.14298	27.37924	9.854645	20.60314	9.493479
2000	13.62731	12.2129	16.89612	17.52934	22.14695	22.2465	16.56154	25.88751	10.28488	19.15365	9.106986
2001	12.9414	11.5035	16.87571	17.12566	23.29736	20.96256	11.61314	29.09765	10.37367	17.12008	8.886292
2002	12.65239	13.12542	17.93599	18.66936	24.19459	19.58155	10.6565	28.85384	10.50624	13.32562	8.534104
2003	12.89644	15.349	16.70304	18.6011	24.24268	17.88427	12.36684	23.52293	11.25063	13.93871	9.837127
2004	13.57935	11.14413	10.95329	21.1624	27.49096	20.65856	10.42593	23.79899	11.29903	14.50665	9.985357
2005	13.27596	12.72299	11.18301	25.19463	30.79031	19.12963	10.9492	24.2614	11.84803	12.45072	10.42841
2006	15.7311	10.79112	11.67217	23.32683	31.68886	21.55077	10.14288	26.09946	10.5065	12.84022	10.34259
2007	19.25765	11.6874	12.6776	26.06586	33.43275	31.94444	10.18441	30.6249	12.08201	13.33847	11.29027

YEAR	BANK OF NEW YORK -	SUNTRU ST BANKS	CAPITAL ONE FIN'L -	NATIONA L CITY CORP -	STATE STREET CORP -	REGIONS FINANCIA L - TOTAL	PNC FINL SVCS GROUP -	BB&T CORPOR ATION -	FIFTH THIRD BANCOR	Average	Banks	Invest. Banks
1997	11.98741	11.15185	7.143117	12.77249	19.03509	12.0418	12.44945	13.03947	9.385684	16.16212	11.24641	28.73735
1998	9.410642	11.39186	6.883883	11.47119	20.373	12.27567	12.77627	12.4802	9.099128	15.72284	10.72361	28.61349
1999	11.25335	12.50711	8.799405	14.74703	22.96229	13.93567	12.68298	13.59138	9.785649	15.93332	12.16282	24.81635
2000	10.07763	12.56145	9.625073	13.07784	21.24402	12.63418	10.49339	12.3989	9.055492	14.84108	11.24049	21.95258
2001	12.8265	12.52943	8.480288	13.99465	18.17841	11.24513	11.94711	11.52318	9.297814	14.49098	11.48051	22.62081
2002	11.60443	13.37848	8.085874	14.23426	17.92229	11.47296	9.67736	10.85784	9.545015	14.2407	11.10703	22.82483
2003	10.9631	12.88573	7.647911	12.21326	15.23125	10.91571	10.25854	9.106096	10.69126	13.82528	10.5852	21.06274
2004	10.17535	9.937499	6.407492	10.87828	15.26871	7.824247	10.66814	9.242621	10.58449	13.29957	9.464765	23.27773
2005	10.33556	10.64183	6.278008	11.28983	15.38684	7.98788	10.73853	9.809392	11.13964	13.79209	9.777583	24.84399
2006	8.916588	10.22598	5.933747	9.614622	14.80323	6.92555	9.438265	10.33253	10.0448	13.54639	8.929011	25.66648
2007	6.722305	9.947309	6.198638	11.21539	12.61554	7.115046	9.352363	10.49858	12.11243	14.91817	9.145257	30.51699

Source: Federal Reserve, Datastream, OECD

# Fig. 5: Citi Balance Sheet Management

	Capital Resource Management, Citigroup (\$ billion, except where indicated)									
	2002	2003	2004	2005	2006	Quarterly: 2007				2008
						31-Mar	30-Jun	30-Sep	31-Dec	
<b>Balance sheet (end of period)</b>										
Total assets*	1070	1236	1452	1461	1851	1987	2182	2318	2146	
Risk-wtd. assets (BIS)	696	750	852	885	1058	1107	1168	1262	1253	
Risk-weight adj. %	-35.0	-39.3	-41.3	-39.4	-42.8	-44.3	-46.5	-45.6	-41.6	
Equity*	60	70	77	79	86	88	89	87	72	
Tier 1 capital (BIS)	59	66.9	74.4	77.8	90.9	91.4	92.4	92.4	89.2	
<b>Memo: Mortgages</b>	152.2	161.0	205.5	237.0	275.9				313.5	
<b>Memo: Total Loans</b>	447.8	478.0	548.8	583.5	679.2				778.0	
<b>Capital ratios (end of period)</b>										
Equity ratio (%)	5.61%	5.66%	5.30%	5.41%	4.65%	4.43%	4.08%	3.75%	3.36%	
Leverage ratio (%)	5.67%	5.56%	5.20%	5.35%	5.16%	4.84%	4.37%	4.13%	4.03%	
BIS Tier 1 ratio (%)	8.47%	8.91%	8.74%	8.79%	8.59%	8.26%	7.91%	7.32%	7.12%	
<b>Cash impact on capital (flow)</b>										
Dividends	3.7	5.8	8.4	9.2	9.8	2.7	2.7	2.7	2.7	
Stock repurchases	5.5	2.4	0.8	12.8	7	0.3	0	0	0	
Cash returned to owners	9.2	8.2	9.2	22	16.8	3	2.7	2.7	2.7	
Retained earnings	9.7	12.1	8.6	10.6	11.4	2.3	3.5	-0.5	-12.5	
Stock issues	0	0.7	0.9	1.4	1.8	0	0.5	0.1	0	
Gross additions to equity	9.7	12.8	9.5	12	13.2	2.3	4	-0.4	-12.5	
SWF convertible stock purch.									7.5	6.88
Write Offs cum. to Q1_08										41.9
<b>Memo:</b>										
Cash returned to owners 2003-2007(Q2) \$61.9bn: o/w Dividends \$38.6bn, Return of Capital \$23.3bn.										
Gross additions to equity 2003-2007(Q2): \$53.8bn: additions net of return of capital \$30.5bn.										
* Net of goodwill.										

Source: Citigroup 10K Filings with SEC

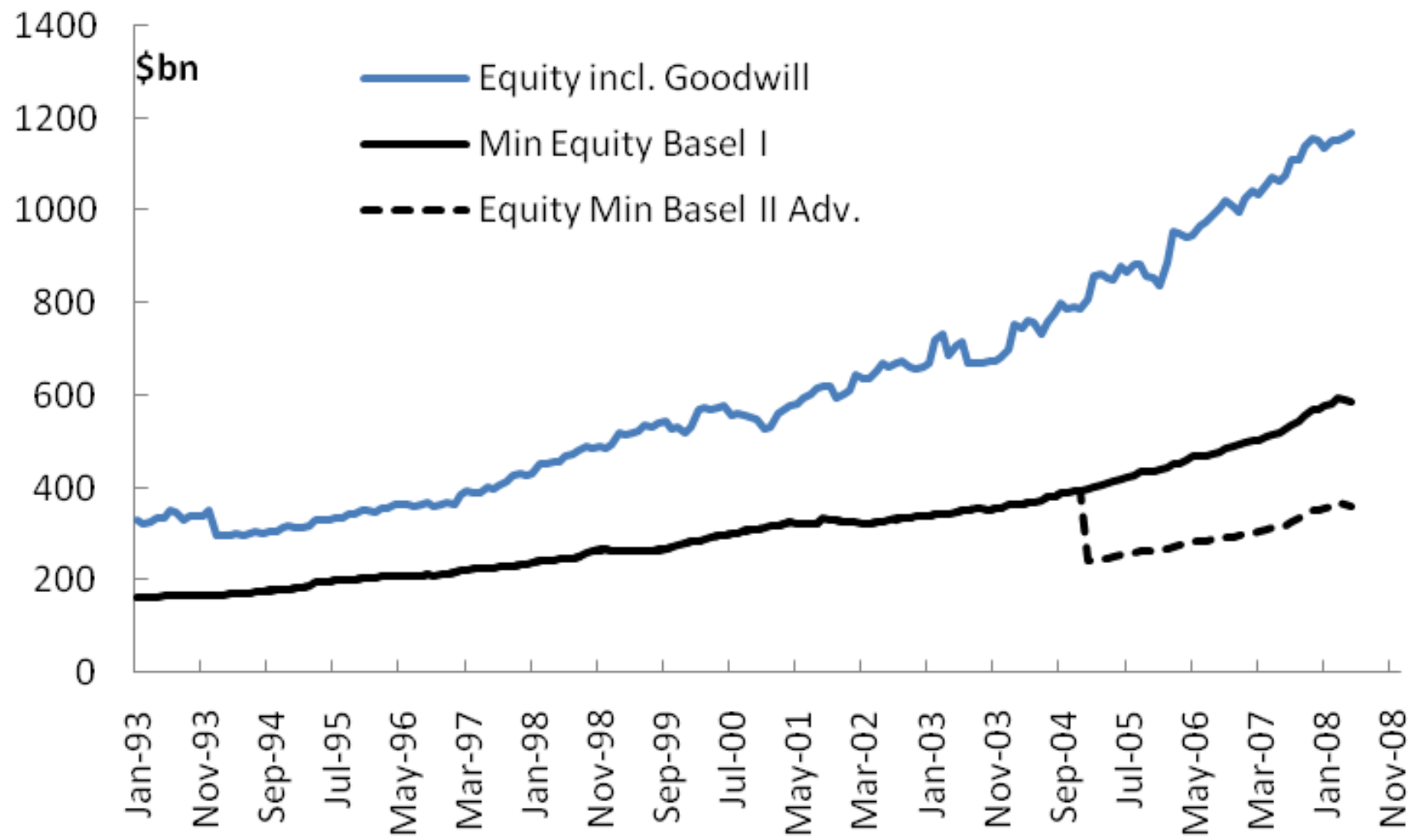
# Fig. 6: Citi Off-balance Sheet Activity

Citigroup: Securitisation and Special Purpose Entities						
Balance sheet, end Dec. \$bn	2002	2003	2004	2005	2006	2007
Assets in consolidated VIEs *		36.9	35.6	50.4	42.1	121.8
Assets in unconsolid. VIEs ( <i>signif. Involve.</i> )		116.6	135.8	191.4	388.3	356.3
Sub-prime in Securities and Banking						37.3
o/w ABS-CDOs						29.3
Direct exposure						8
Max.loss exposure to unconsolid. VIEs		50	78	91	109	
As reported & revised in 2007 financials					147.9	152.2
o/w funded						38.5
o/w unfunded						113.7
Assets in QSPEs: all involvement *		653.9	971.9	1203.5	1505.7	
QSPE (Citi acting as 'principal')					541.2	766
o/w retained interests in mortgages					8.8	18.4
o/w transferred mortgage exposures					394.4	582.5
o/w other retained interests					10.4	13.9
o/w other transferred interests					127.6	151.2
<b>Cash flows during the year \$bn</b>						
Proceeds from new mortgage securitiz.	40.1	70.9	66.4	85.2	99.4	147.3
o/w US Consumer				58.9	67.5	107.2
o/w Markets and Banking				26.3	31.9	40.1
Commissions and fees		15.7	16	16.9	19.2	21.1
o/w Investment banking		3.5	3.5	3.5	4.1	5.2
o/w Credit cards and bankcards		4.2	4.5	4.5	5.2	5.1
o/w Smith Barney (GWM)		2.1	2.2	2.3	3	3.3
o/w Markets and Banking trade-related		1.6	2	2.3	2.5	2.7
Principal transactions	4.5	4.9	3.7	6.7	8	-12.1
o/w Markets and Banking				5.6	6.9	-15
o/w Fixed income	2.3	2.4	1.8	3.9	5.6	4.1
o/w Credit products**	0	-0.1	0.1	0	-0.8	-21.8
o/w Equities	0.2	0.2	-0.3	0.3	0.9	0.8
o/w Foreign exchange	1.9	2.2	1.8	0.6	0.7	1.2
o/w Commodities	0.1	0.1	0.4	0.8	0.5	0.7
* Securitization vehicles used by Citigroup are generally accounted for as "Qualifying Special Purpose Entities"(QSPE's), or "Variable Interest Entities"(VIE's). QSPE's are passive entities generally exempt from consolidation by the transferor, here Citigroup. VIE's are vehicles that either must supplement their equity with additional subordinated financial support, or whose equity investors lack the characteristics of a controlling financial interest. Under FIN 46-R the primary beneficiary of a VIE is obliged to consolidate it. Maximum exposure to loss where a "significant involvement" in an unconsolidated VIE exists must also be disclosed.						
** Includes structured products, incl. sub-prime related						

## Fig. 7: Citi Example

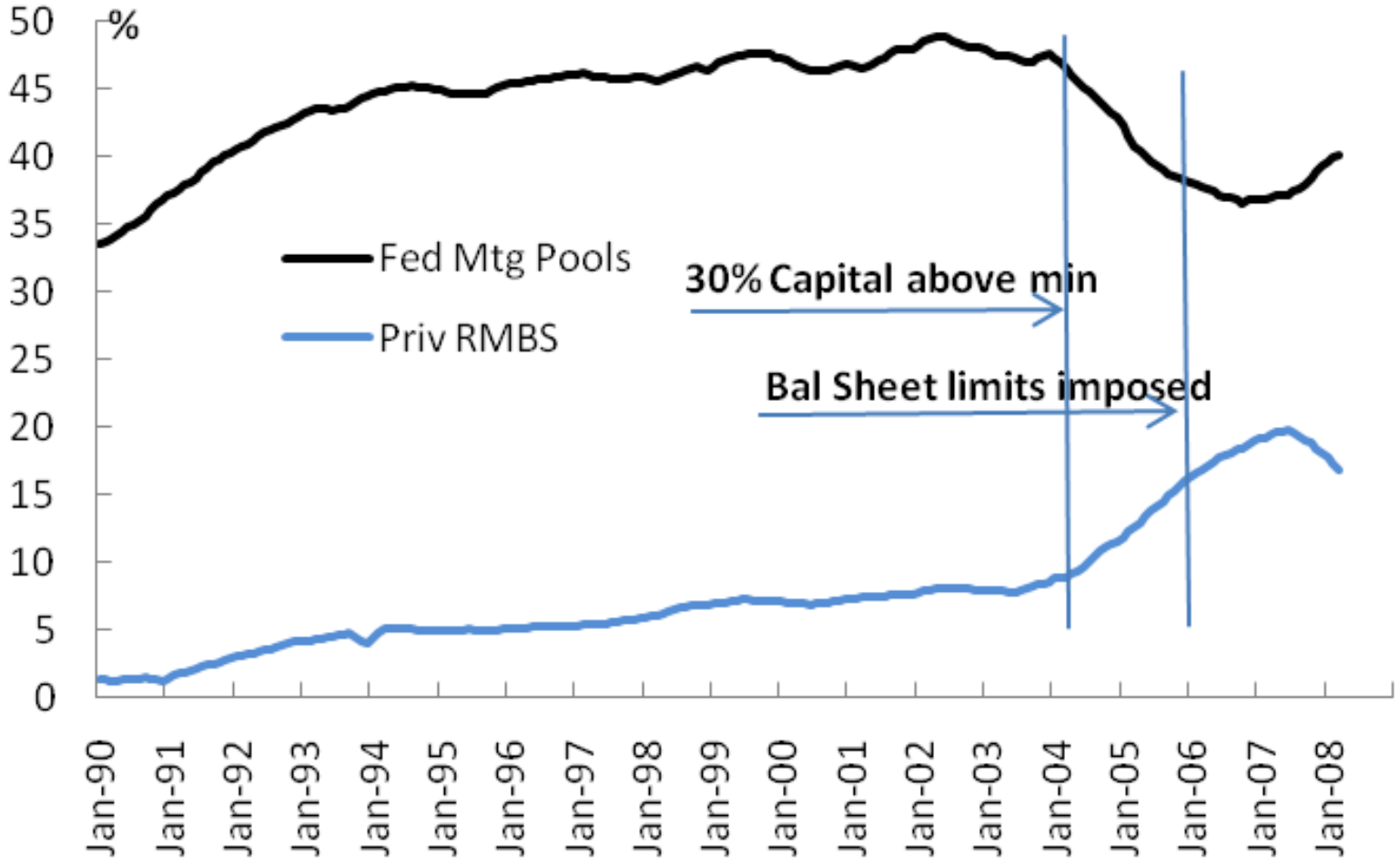
- Mortgages + QSPE(mortgage only)  
 $\$313.5\text{bn} + \$600.9\text{bn} = \$914.4\text{bn}$
- % Decline in Risk Weight for Mortgages -66%  
i.e. Basel I capital weight 50%, Basel II 17%
- So keep 33% on balance sheet and 67% off  
balance sheet to achieve Basel II lower charge  
before Basel II starts.  
i.e.  $0.33 * 50\% \text{ on B/S} + 0.67 * 0\% \text{ off B/S} = 17\%$
- For Citi  $\$313.5\text{bn} / \$914.4\text{bn} = 34\%$

Fig. 8: US Comm. Bank Equity, Basel I Min Capital, Basel II (Advanced) Min Capital; Estimates



Source: Federal Reserve, Basel Committee, OECD

# Fig. 9: Fed Mortgage Pools versus Private RMBS, (% Total Mortgages)



Source: Federal Reserve, Datastream, OECD

## Fig 10: Six Facilitating Factors

- The tax system promotes leverage and distortion.
- Credit rating agencies working with IB's.
- Accounting standards and up front revenue recognition.
- Poor underwriting standards.
- Poor risk modelling.
- Corporate governance and remuneration of bank operatives.

## Fig. 11: Tax Issues: Causal

- Tax deductibility of interest favours mortgages and corporate leverage.
- A key part of the private equity boom (gearing, taxing carried interest, etc).
- A key part of the growth in QSPE's (to engage in tax free exchanges). Pass through to mortgage and other conduits (1986 reform in the US); synthetic leases. Infrastructure funds in Australia; etc
- Failure to penalise up front fees and remuneration of deal makers.
- Tax havens.

## Fig. 12: Tax Issues: Exacerbating the Crisis

- The tax-led boom in leverage led to de-equitisation in the 2000's; and now that process is being reversed with issuance and dilution of shareholders. Equity crash and overshoot.
- It is leading to insolvency which is spreading to all forms of leveraged models outside the crisis banks. This also causes forced asset sales to reduce leverage.

## Fig. 13: Tax Issues: Paying For the Crisis

- Conservatively trillions of dollars are being spent and budget deficits are set to soar to levels thought unthinkable (10%+??).
- Taxes are going to have to rise to pay for it. But what forms of tax rises will best suit recovery and the type of investment we would like to see?