An Assessment of Financial Sector Rescue Programmes

Michael R. King

Bank for International Settlements

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The views expressed in this presentation are those of the author and do not necessarily represent those of the BIS.

Messages from BIS 79th Annual Report (June 2009)

- Policymakers need to focus on the medium term and on sustainability when designing both macroeconomic and financial policy (regulatory) responses to a crisis

- The financial system needs to be repaired but moral hazard needs to be addressed.

- Policymakers need to resist financial protectionism and continue to promote global banking, as this benefits economic growth and development.

- The problem of too-big-to-fail remains. Policymakers have not adequately addressed the misaligned incentives of private compensation schemes.

Messages from BIS 80th Annual Report (June 2010)

- Embargoed until Monday June 28

Outline

- Overview of key financial sector rescue programmes
  - Timeline of key events
  - Structure of rescue packages
  - Size of rescue packages

- Study of market reaction to announcements in 6 countries
  - Shareholders (equity prices)
  - Creditors (credit default swap "CDS" spreads)

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Timeline of key events

9 Aug 2007	Problems in mortgage and credit markets spill over into interbank money markets.
12 Dec 2007	Major central banks announce USD swap lines to address short-term funding pressures
16 Mar 2008	JPMorgan Chase purchases Bear Stearns with help of US Fed.
7 Sept 2008	Two US GSEs (Fannie Mae and Freddie Mac) are taken into government conservatorship.
15	Lehman Brothers files for Chapter 11 bankruptcy protection.
16	A large US money market fund "breaks the buck". US government supports AIG.
19	US makes public plans for Troubled Asset Relief Program (TARP).
29	Bradford & Bingley nationalised. Fortis gets capital from governments.
3 Oct 2008	US Congress approves $700 billion TARP. Dutch nationalise Fortis.
8	UK announce bank recapitalisations and debt guarantee scheme.
9	Netherlands announce bank recapitalisations.
13	France and Germany announce bank recapitalisations and debt guarantees. Germany announces fund to purchase bank assets (not used).
14	US uses TARP funds to recapitalise nine banks, and announces debt guarantee scheme. Netherlands announce debt guarantee scheme.
16	Switzerland purchase illiquid assets from UBS and invest capital.
5 Nov 2008	Switzerland announces debt guarantee scheme.

Structure of rescue packages

- Measures: (i) capital injections, (ii) deposit and debt guarantees, and (iii) actions to address impaired assets.
  - Followed exceptional actions to provide banks with short-term funding through CBs, to restrict the short-selling of stocks, and to offer / increase guarantees on bank deposits.

	AU	BR	CA	CH	DE	FR	GB	HK	IT	JP	KR	NL	US
Deposit insurance	✓			✓	✓	✓	✓	✓	✓		✓		✓
Restrictions on short selling	✓		✓		✓	✓	✓		✓	✓		✓	✓
Capital injections		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Debt guarantees	✓		✓		✓	✓[2]	✓		✓	✓	✓	✓	✓
Asset insurance							✓					✓	✓
Asset purchases	✓		✓	✓	✓		✓			✓			✓
Nationalisation					✓		✓					✓	✓

AU = Australia; BR = Brazil; CA = Canada; CH = Switzerland; DE = Germany; FR = France; GB = United Kingdom; HK = Hong Kong, China; IT = Italy; JP = Japan; KR = Korea; NL = Netherlands; US = United States. ✓ = yes; blank space = no.
1. Reflects information up to end-April 2009.   2. Via the Société de financement de l'économie française.
Sources: CGFS Financial Sector Rescue Plan Database; national data.
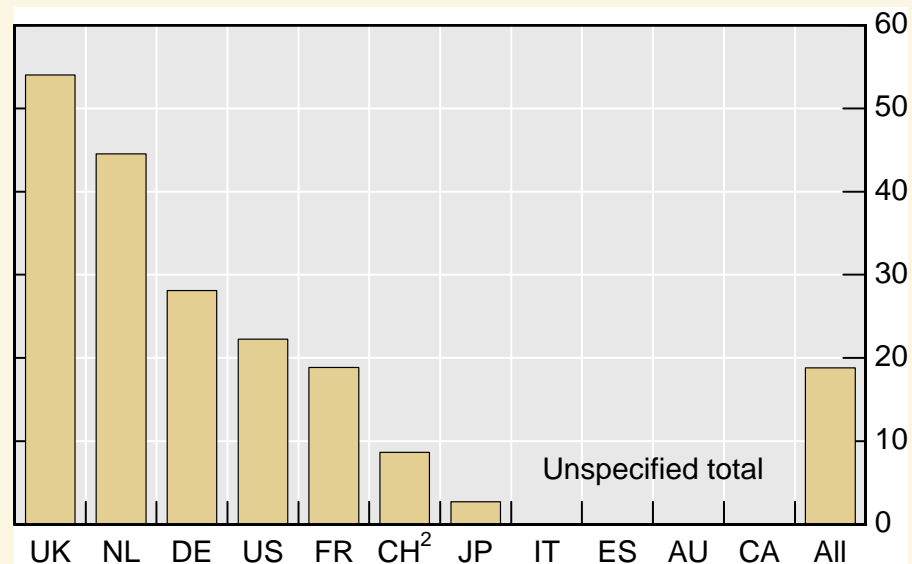
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Size of rescue packages (As of 10 June 2009)

- Overall resources committed by 11 countries totalled €5 trillion or 18.8% of GDP; outlays by mid-2009 €2 trillion or 7.6% of GDP.

Outlays as a percentage of banking sector assets
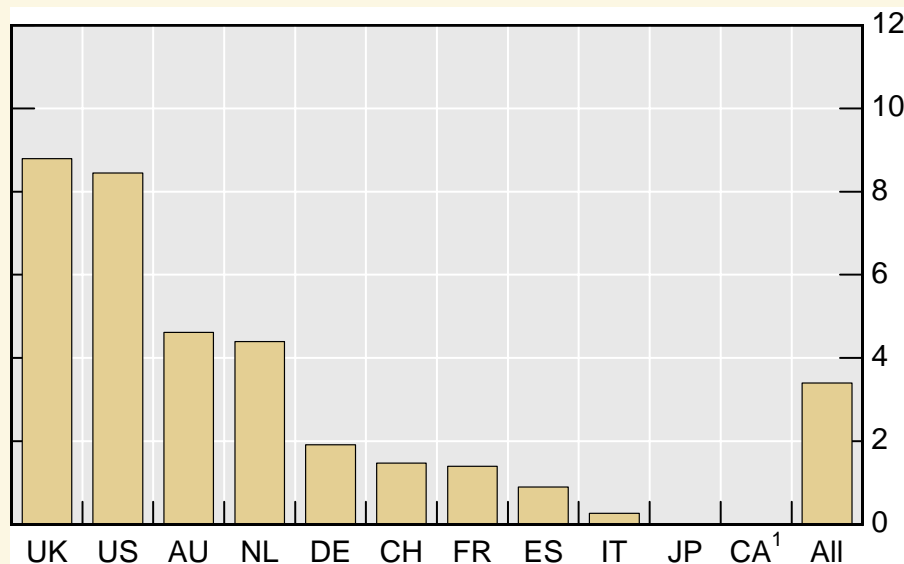
Commitments as a percentage of GDP

[1] No outlays so far.   [2] Excludes the unspecified verbal commitment of possible debt guarantee.

"Time to buy or just buying time? The market reaction to bank rescue packages" BIS Working Paper No 288

- Assess market response to bank rescue packages
  - Top down (country-level) and bottom up (bank-level)
- Compare response across countries
  - How did terms of rescue packages vary?
  - How did the relative cost and conditions affect response?
- Distinguish impact on creditors (CDS) from impact on shareholders (stock prices)
- More analysis and detail in paper

Summary of findings

- Stocks: brief positive reaction, then continued to fall in all countries except US ➔ not a buying opportunity
  - Banks receiving support significantly underperform peers
- CDS: spreads narrow prior to announcements, and continue to narrow in all countries ➔ positive for creditors
  - Similar reaction for banks receiving and not receiving support
- October rescue packages bought governments time
  - Evaluate situation and formulate further responses
  - Need for more capital (US, UK, DE), debt guarantees (NL, CH), asset purchases (US, DE), asset insurance (US, UK, NL), stress tests, strategies to address impaired assets…

Overview of rescue plans for six countries
(15 September 2008 to 30 January 2009)

Measure	United Kingdom	Nether-lands	Germany	France	United States	Switzer-land
CB liquidity	Yes	Yes	Yes	Yes	Yes	Yes
Short selling restrictions	18 Sep	21 Sep	21 Sep	21 Sep	18 Sep	21 Sep
Ad hoc support	29 Sep	29 Sep	6 Oct	30 Sep		
Deposit insurance	3 Oct	10 Oct	6 Oct		3 Oct	5 Nov
Capital injections	8 Oct	9 Oct	13 Oct	13 Oct	14 Oct	16 Oct
Debt guarantees	8 Oct	14 Oct	13 Oct	13 Oct[1]	14 Oct	5 Nov
Asset purchases			13 Oct		3 Oct[2]	16 Oct
Asset insurance	19 Jan	26 Jan			24 Nov	

[1] Via the Société de financement de l'économie française. [2] Plans for the Troubled Asset Relief Program (TARP) were made public on 19 September. The TARP was voted down by Congress on 29 September, but approved in revised form on 3 October.

Terms of preferred shares

Country	Security	Dividend / Coupon	Redemption / Convertibility	Conditions
United States – Capital Purchase Program [1]	Preferred	5% for 5 years, 9% thereafter	Callable at par after 3 years (or earlier using proceeds from qualifying equity offering)	Limits on compensation and common dividends / share repurchases.
United Kingdom	Preferred	12% for 5 years, Libor + 700 basis points thereafter	Non-callable 5 years	*No common dividends.* Limits on compensation. Board appointments. Lending.
France	Subordinated debt	8% for 5 years, floating thereafter		Limits on compensation. Lending.
Germany	Preferred	Not reported	Not reported	Limits on compensation and dividends. Lending.
Netherlands	Preferred	8.5% minimum, increasing if dividends paid to common	Callable at €15 per share; convertible to ordinary after 3 years	Limits on compensation. Board appointments.
Switzerland	Mandatory convertible notes	12.5% maturing in 30 months	Convertible to common at the issuer's option; converts automatically after 30 months	Limits on compensation.

Data

- 50 banks from six countries
  - US 19, UK 6, FR 6, DE 4, NL 4, CH 11
  - Daily data Jan 2006 to Jan 2009
  - Publicly-listed year-end 2008 with free-float > 20%
  - Exclude:
    - acquired banks (Bear Stearns, Dresdner, ABN Amro) or bankrupt (Lehman)
    - private, foreign-owned and state-owned banks
    - finance companies and insurance
- CDS indices and spreads: Markit
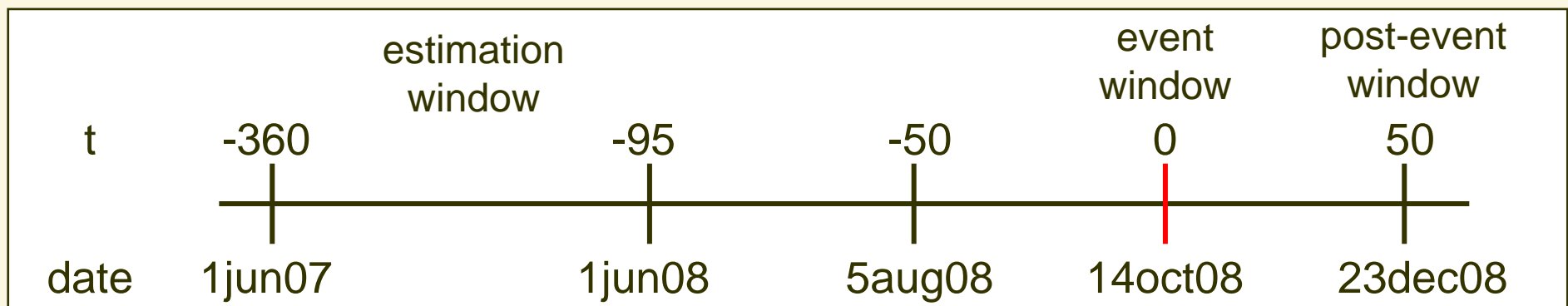 - 28 banks with liquid CDS (missing obs, no change)
- Stock indices and prices: Datastream

Methodology: event study of stock returns

- Regress stock returns for bank *i* (R_{it}) on market returns (R_{mt}) over estimation window [-360,-05] ➔ establish normal relationship

- Predict stock returns over [-50,50] ➔ establish what we expect

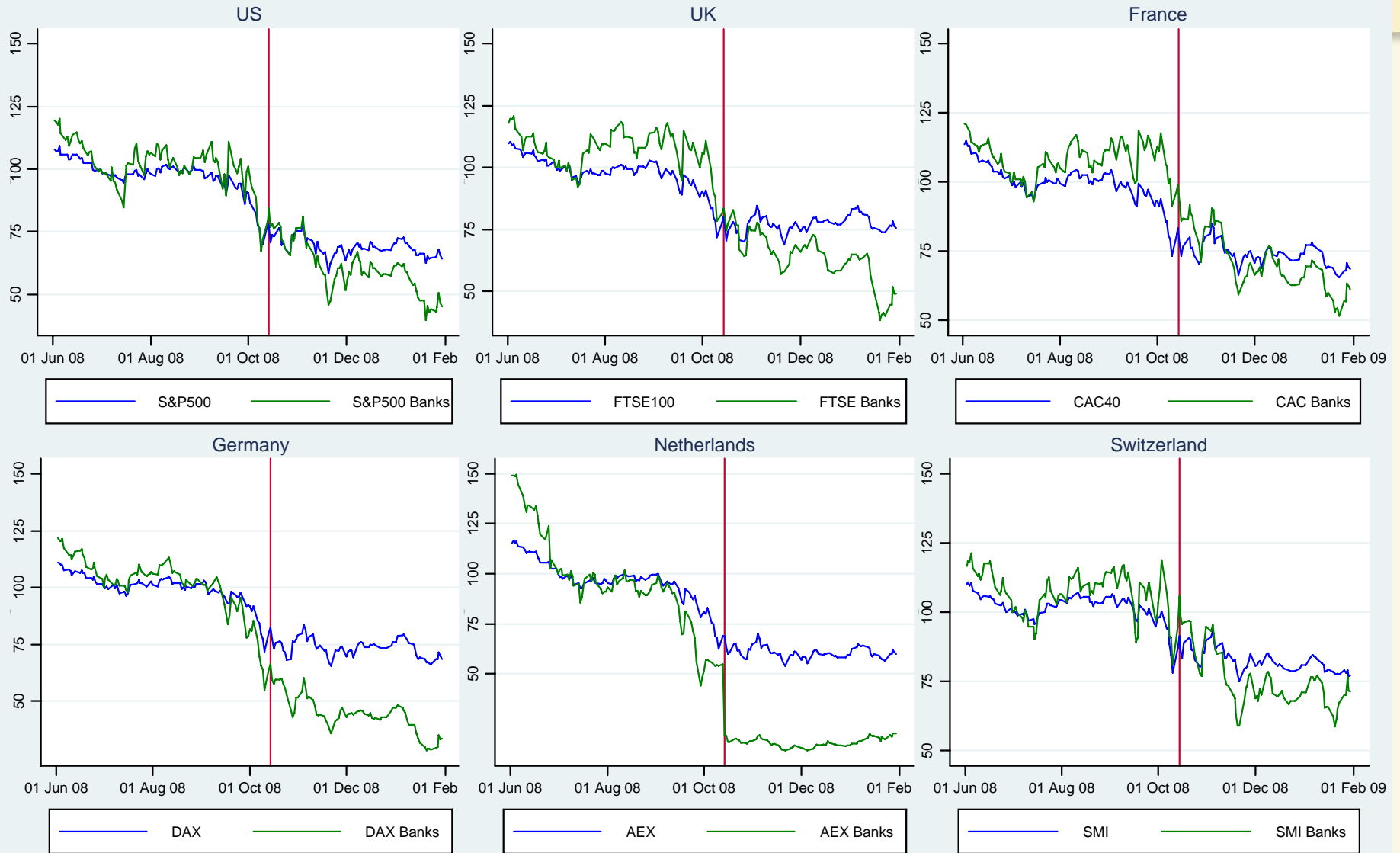- Abnormal returns (ARs) = actual – predicted ➔ impact of event

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it} \quad \text{over [-360,-95]}$$

$$AR_{it} = R_{it} - E(R_{it} \mid X_t) \quad \text{over [-50,50]}$$

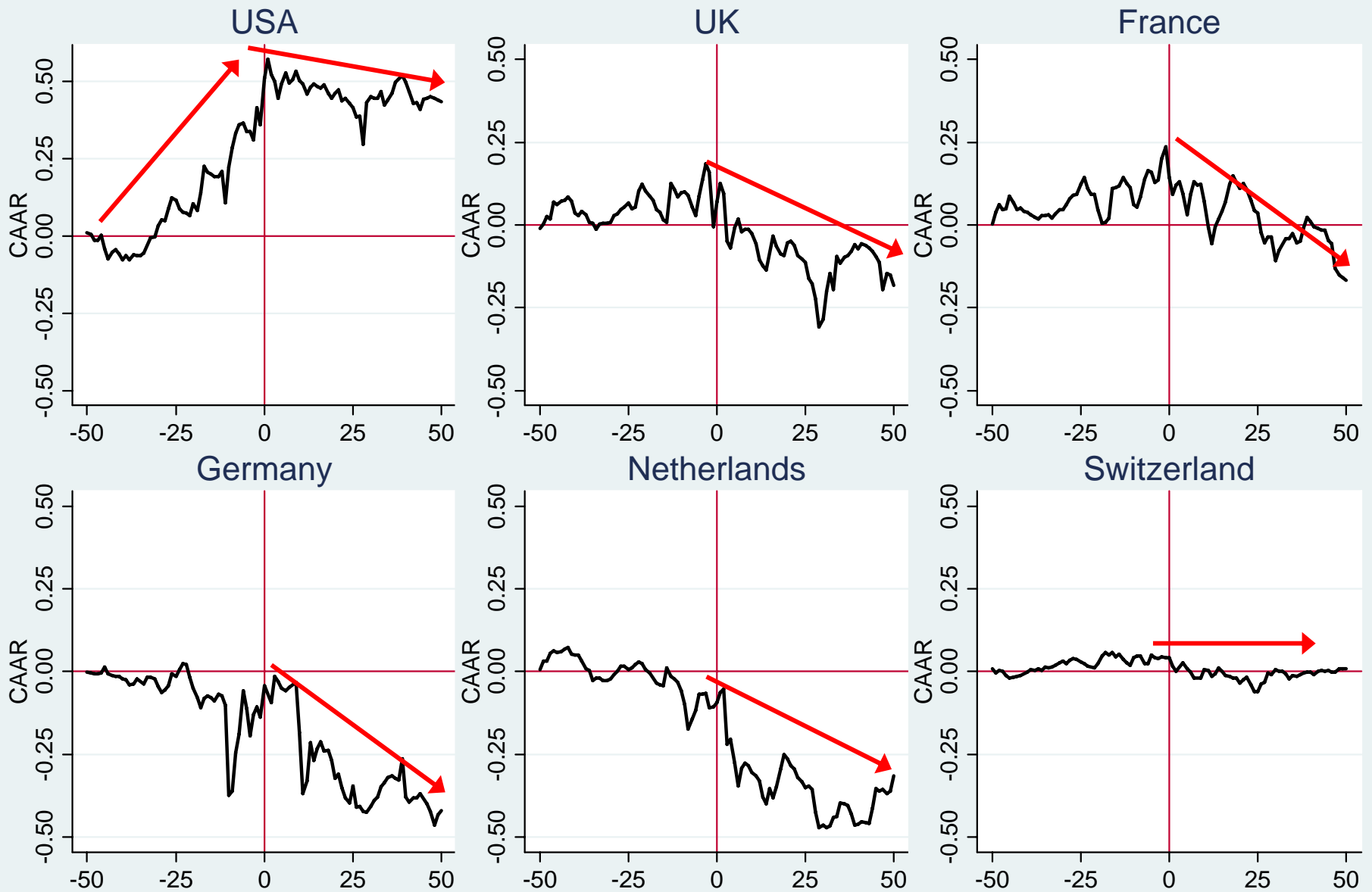|	estimation window		event window	post-event window
t	-360	-95	-50	0	50
date	1jun07	1jun08	5aug08	14oct08	23dec08

Stock markets and banking sub-indices

Index 100 = 1jul2008. Vertical line marks announcement of rescue package.

Source: Datastream, author's calculations

Abnormal returns by country

Source: Datastream, author's calculations

CDS event study (multifactor model)

● Use multifactor model based on findings in literature

- Exclude factors directly linked to bank risk (eg Libor-OIS)

$$R_{CDSt} = \alpha_i + \beta_i R_{mt} + \beta_2 R_{rt} + \beta_3 R_{vt} + \varepsilon_{it}$$

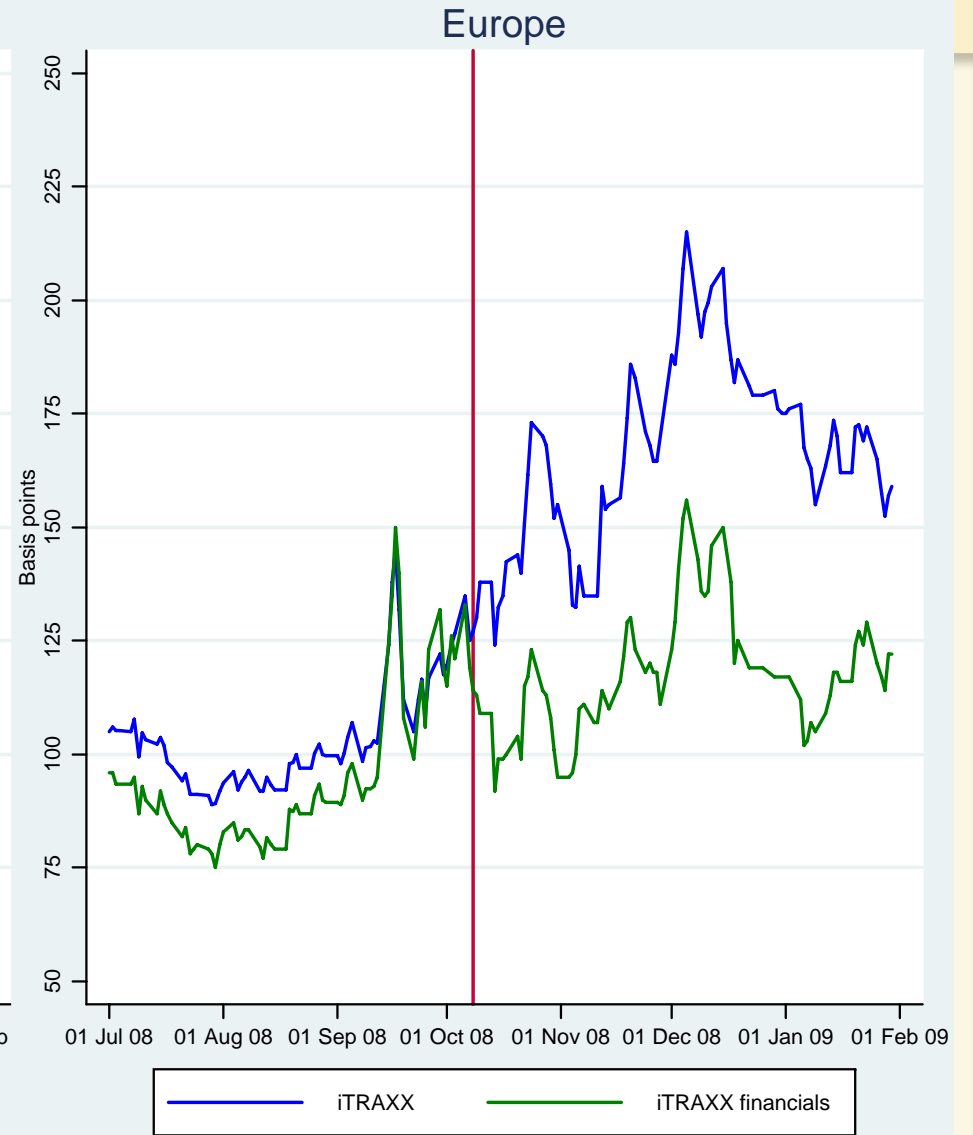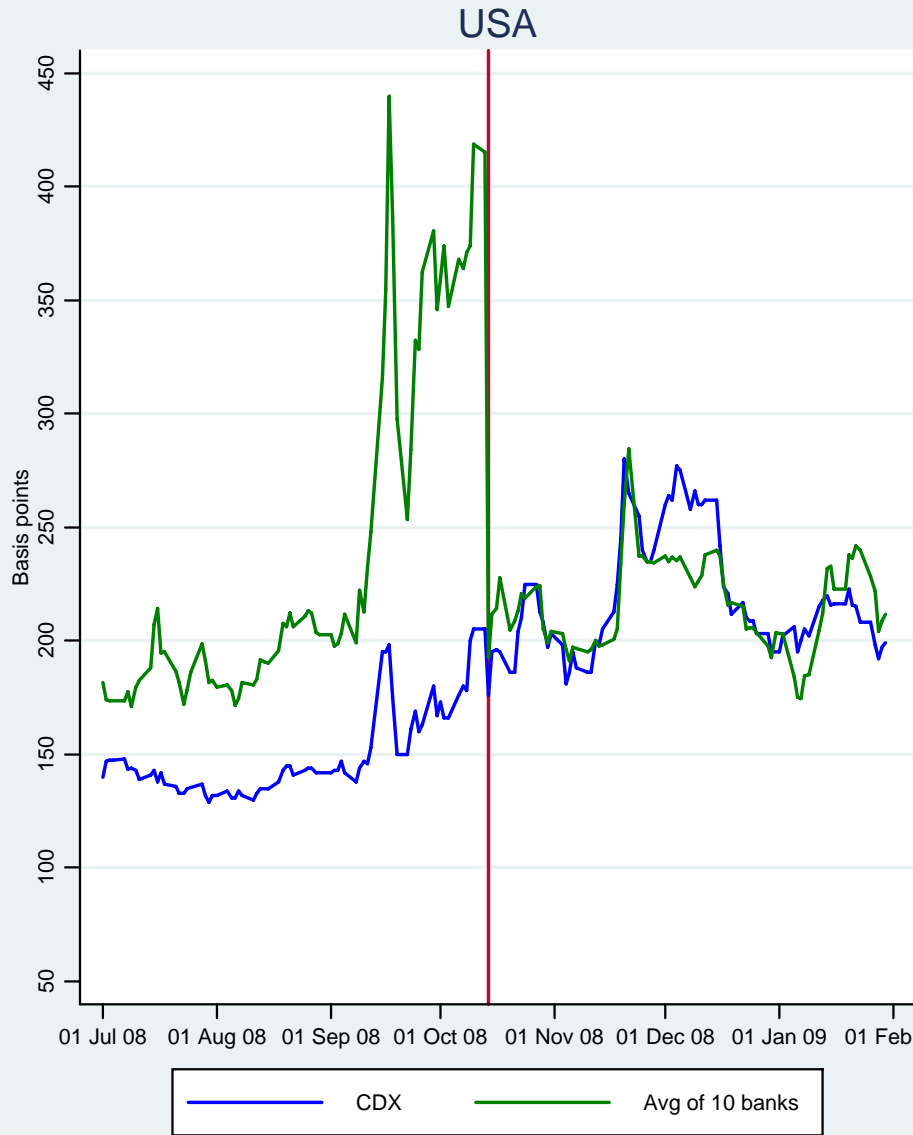Where

R_{CDS} = change in level of CDS spread for bank i

R_m = change in CDS market index

R_r = return on 10-year government bond

R_v = change in implied volatility of national stock mkt index
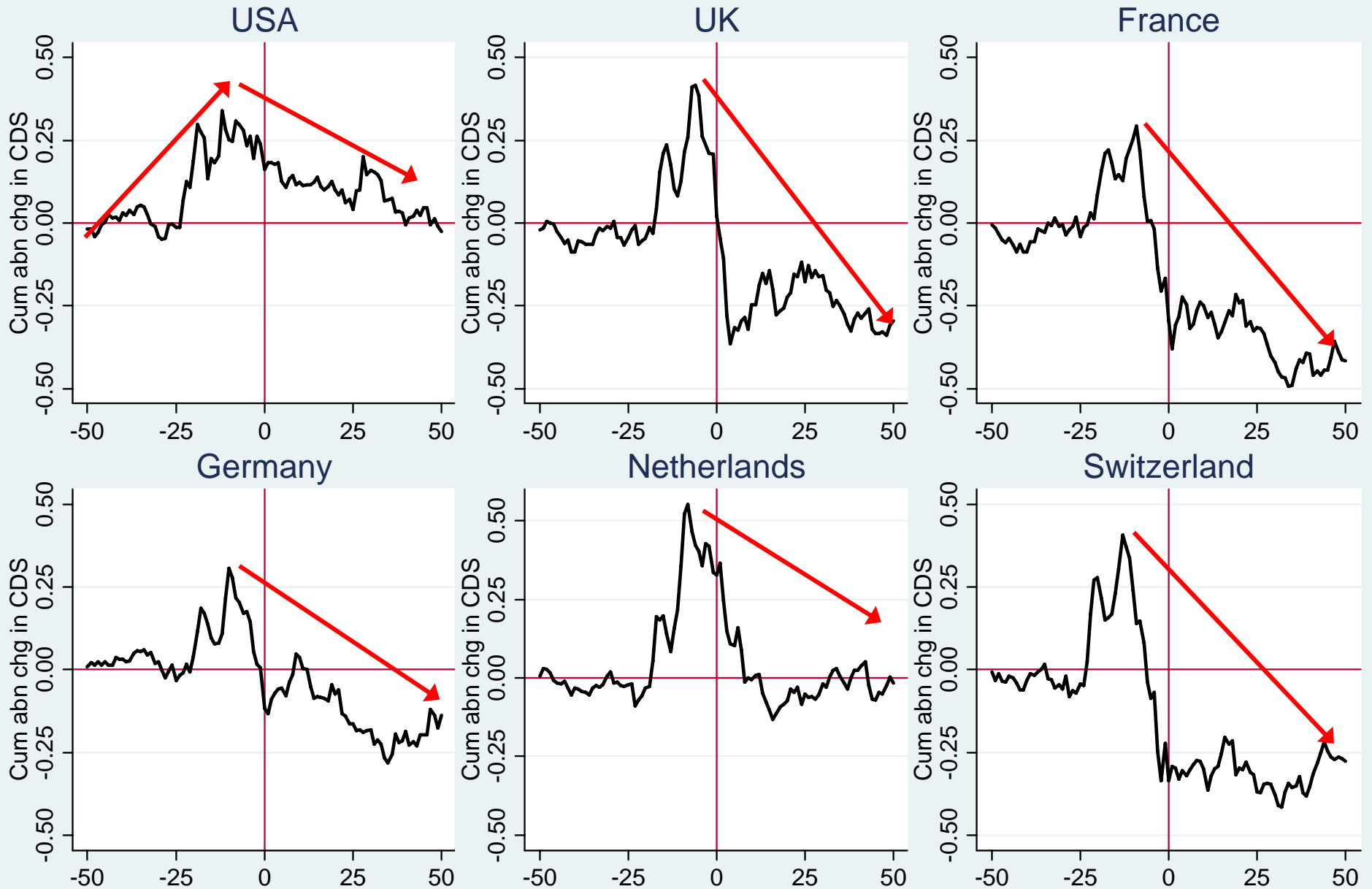
5-Year investment grade CDS indices

Vertical lines mark announcement of US and UK rescue packages.

Source: Markit

Abnormal change in CDS by country

Source: Datastream, author's calculations

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Table 3: Cumulative average abnormal change in CDS spreads around announcement

Country	[-50,-26]	[-25,-1]	[0,1]	[2,25]	[26,50]	[-50,-1]	[0,50]
Panel A. Cumulative abnormal changes in CDS spreads based on multi-factor model							
United States	-0.7%	23.6%	-6.1%	-14.6%	-9.0%	22.9%	-29.7%
United Kingdom	-1.7%	27.9%	-25.4%	-10.4%	-9.8%	26.3%	-45.6%
France	-1.7%	-28.3%	-19.3%	2.4%	-10.1%	-30.0%	-27.0%
Germany	-1.4%	-6.1%	-12.2%	-6.9%	-1.1%	-7.5%	-20.2%
Netherlands	-4.6%	32.0%	4.1%	-43.5%	1.0%	27.4%	-38.4%
Switzerland	-10.9%	-16.4%	-8.1%	-16.8%	8.9%	-27.3%	-16.0%
Average across all banks	-2.3%	12.2%	-11.8%	-13.8%	-6.1%	9.9%	-31.7%
Banks receiving support	0.4%	10.9%	-12.9%	-10.7%	-8.9%	11.3%	-32.5%
Banks not receiving support	-5.8%	14.2%	-10.4%	-17.6%	-2.4%	8.5%	-30.5%
Difference	6.1%	-3.3%	-2.4%	6.9%	-6.5%	2.8%	-2.0%

Conclusion from study

- Repeated and sizeable government interventions were required to restore market confidence
  - Ad hoc measures were not effective
  - Governments responded to details of packages in other countries
- Creditors benefited and shareholders did not (ex US)
  - Bankruptcies / distress avoided
  - Not clear if banks are in a position to extend credit
- Favorable terms of US rescue package reflected in market response relative to banks in other countries
  - Compare with punitive terms of UK packages

Policy implications

- Coordinate global response to ensure level playing field
- Establish correct incentives and avoid moral hazard; explain strategy *ex ante*
  - Protect depositors to prevent bank runs
  - Write down equity of providers of regulatory capital (shareholders, subordinated debt)
  - Force holders of unsecured debt to bear losses
  - Replace senior management
  - Move impaired assets into "bad bank"
- Government support should be temporary; tax payers should be protected
- Transparency and timeliness are key (eg stress tests)