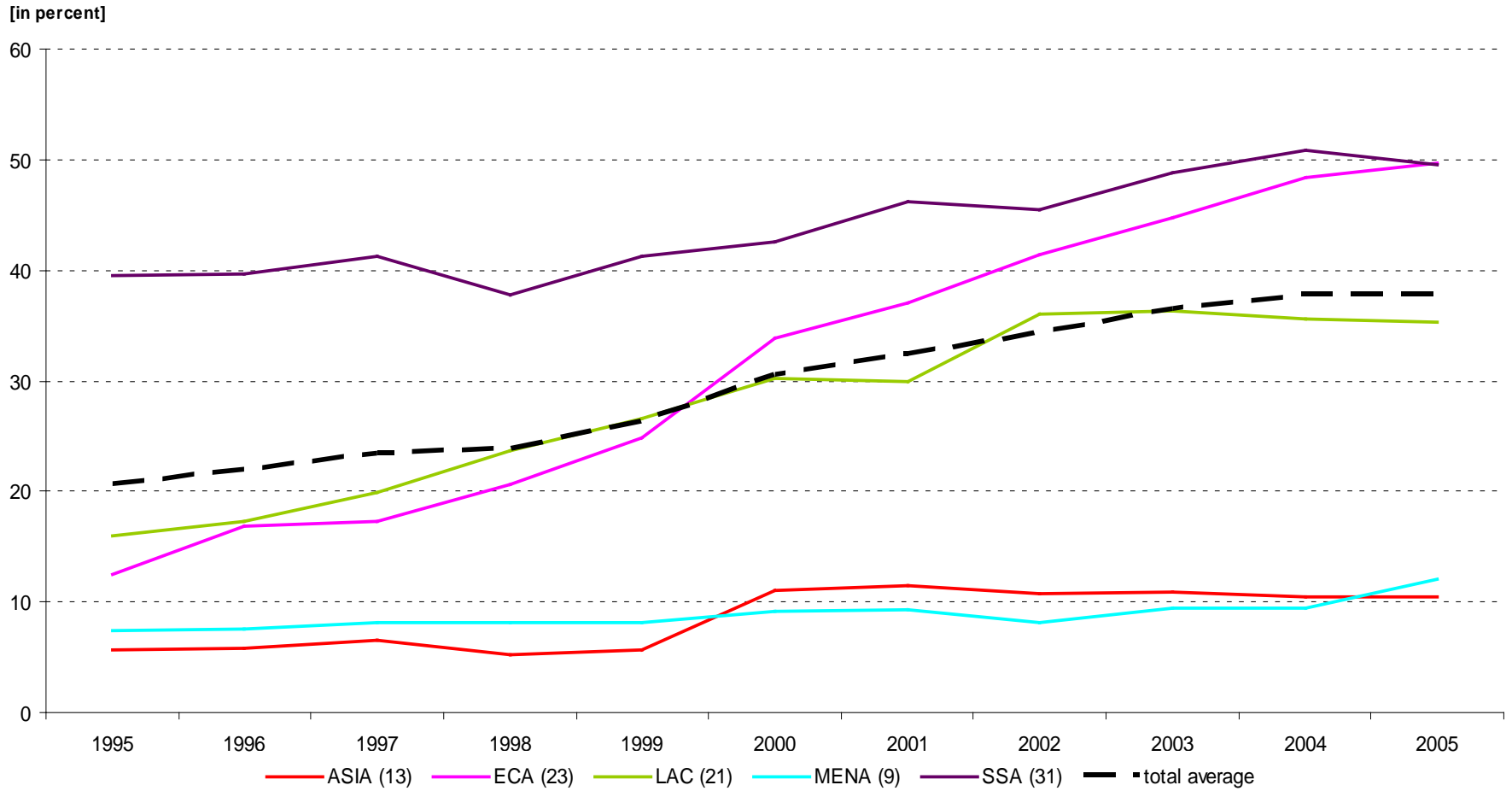


Did foreign banks stabilize
the banking systems of Emerging Markets
during the global financial crisis?

**11th Annual Bank of Finland/CEPR Conference
BANKING IN EMERGING ECONOMIES
Co-organized by Rensselaer Polytechnic Institute
Helsinki, 7-8 October 2010**

**Ursula Vogel and Adalbert Winkler
Centre for Development Finance**

Increase in foreign bank activity

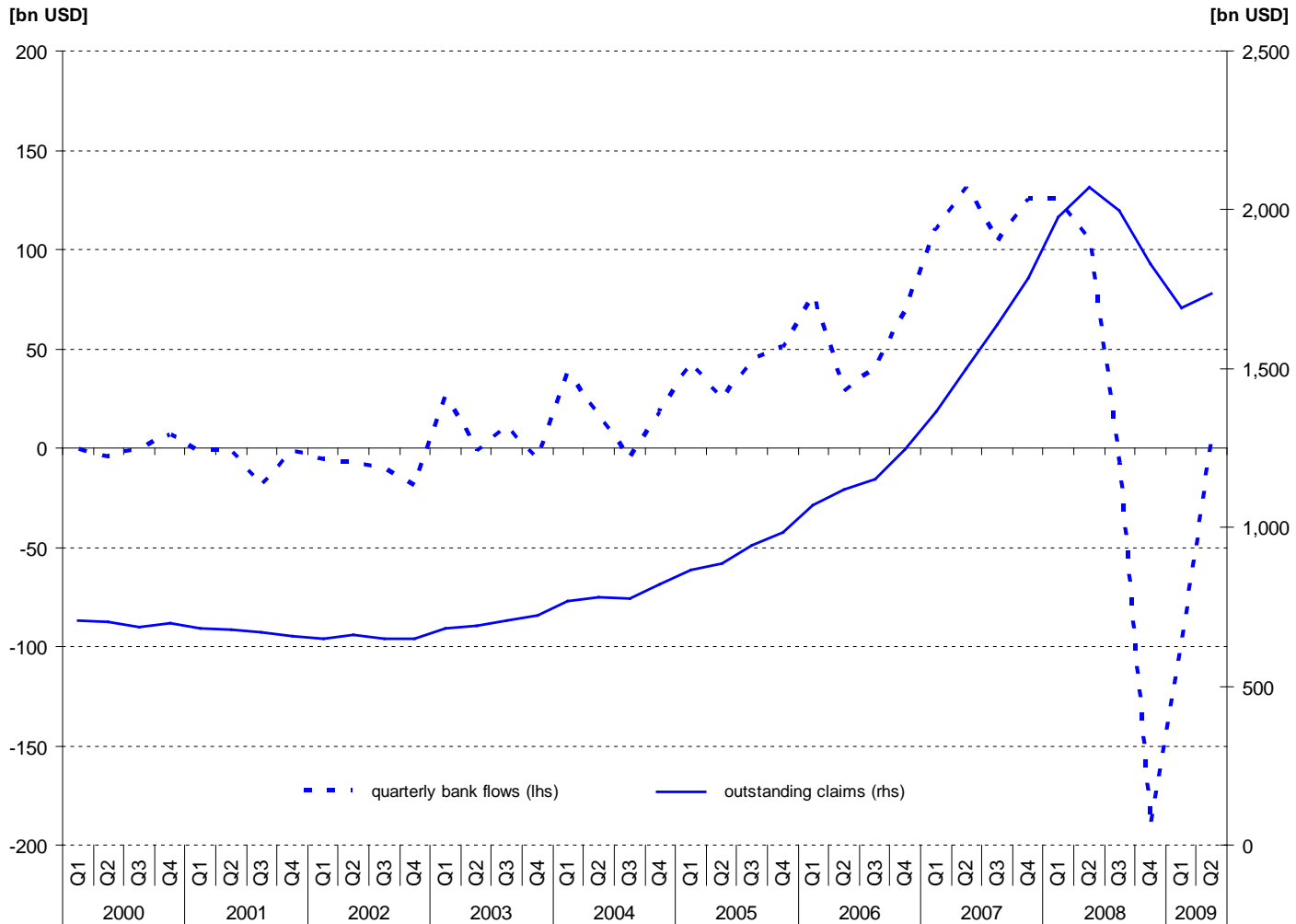


(ASIA: emerging Asia, ECA: Eastern Europe and Central Asia, LAC: Latin American Countries, MENA: Middle East and Northern Africa, SSA: Sub-Saharan Africa)

Source: Claessens et al. (2008), own calculations

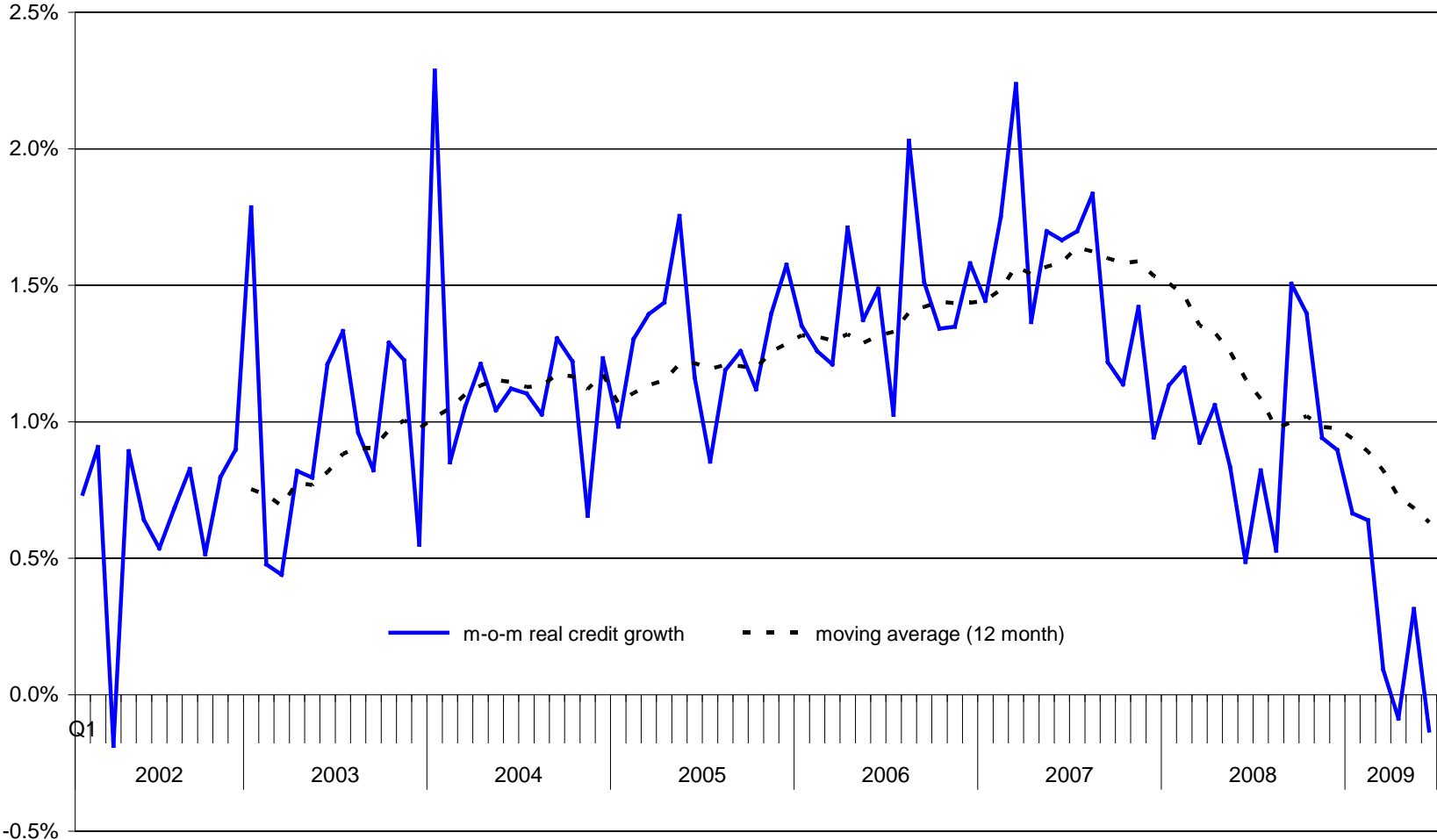
- **capital flows and credit cycles in emerging economies in the 1990s**
 - link between capital inflows and credit booms preceding financial turmoil (*e.g. Mendoza/Terrones 2008*)
 - policy conclusion: strengthening domestic financial systems (*Krugman 1998, Llewellyn 2002*), for example by inviting foreign banks (*EBRD 1998, Mishkin 2001*)
- **contribution of foreign banks to financial stability**
 - better capitalization and sounder lending practices (*Hellmann/Murdock 1998, Giannetti/Ongena 2009*)
 - greater access to international liquidity via parent banks (*Chang/Velasco 2000, De Haas/van Lelyveld 2010*)
- **foreign banks and the global financial crisis**
 - advantages smaller than expected due to institutional weaknesses (*Mihaljek 2008*)
 - mitigate capital outflows in the crisis in CEE (*EBRD 2009*) but are not a determinant of post-Lehman credit growth (*Aisen/Franken 2010*)
 - act as shock transmitters from ‘vulnerable mature economies’ banking sectors’ (*Cetorelli/Goldberg 2010*)

Revival of cross-border bank flows



Source: BIS International locational banking statistics, own calculations

Growth in real credit to the private sector



Source: IFS, national sources, own calculations

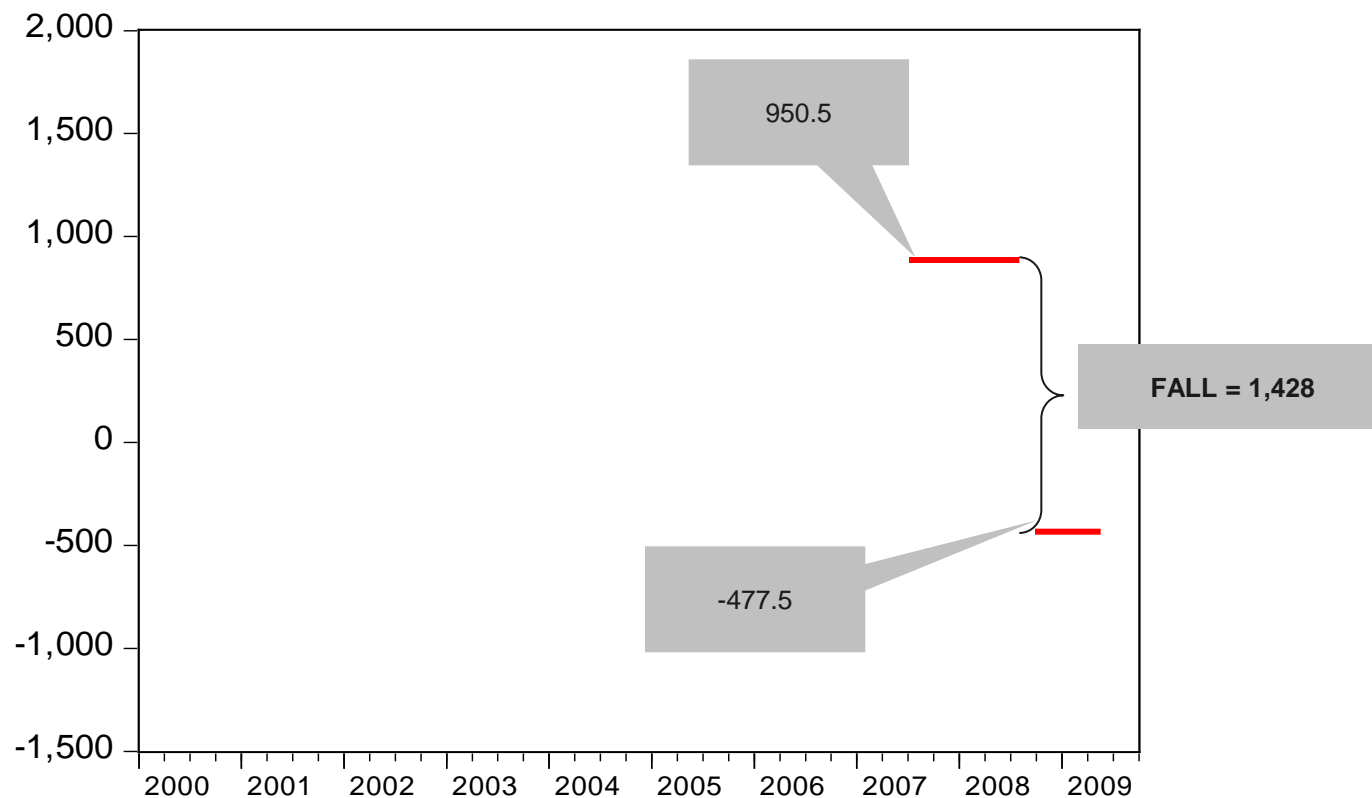
Cross country study – 97 EMEs and developing countries – 5 regions

Main variables:

- **cross-border bank flows** (*BIS International locational banking statistics*)
 - claims of BIS reporting banks vis-à-vis countries, quarterly exchange rate adjusted changes
- **real domestic credit** (*IMF International Financial Statistics, national sources*)
 - credit to private sector series, deflated with CPI series, seasonally adjusted, mom growth rates
- **foreign bank presence** (*Claessens et al. 2008*)
 - share of banking sector assets held by foreign banks

Controls:

- **structural and macroeconomic variables, vulnerability indicators**
(*IMF World Economic Outlook, IFS, World Development Indicators, GFSR, Chinn/Ito 2008, Lane/Shambaugh 2010*)



$$FALL_i = \alpha * FBAS_i + \beta * SURGE_i + \gamma_k * X_{ik} + \varepsilon_i$$

Dependent variable: respective *FALL* measure

	Flows 1/			Credit 2/		
	(1)	(2)	(3)	(4)	(5)	(6)
FBAS	-0.0255** (0.0119)	-0.0299*** (0.0096)	-0.0198** (0.0078)	-0.0019 (0.0050)	-0.0054 (0.0044)	-0.0055 (0.0045)
SURGE 3/ 4/		0.4070*** (0.0548)	0.1678*** (0.0555)		0.6872*** (0.1371)	0.7052 (0.4565)
SURGE^2			0.0610*** (0.0085)			-0.0050 (0.1206)
constant	5.6461*** (0.5808)	3.7180*** (0.5313)	1.2198** (0.5536)	0.5753** (0.2520)	-0.2296 (0.2720)	-0.2392 (0.3594)
R-sqr	0.046	0.399	0.612	0.002	0.252	0.252
N	97	97	97	78	78	78

- foreign banks stabilize bank flows but not real credit growth
- main determinant of *FALL* is *SURGE*
- *SUR* estimation confirms these results
- findings are robust to different specifications of *FALL* and *SURGE*

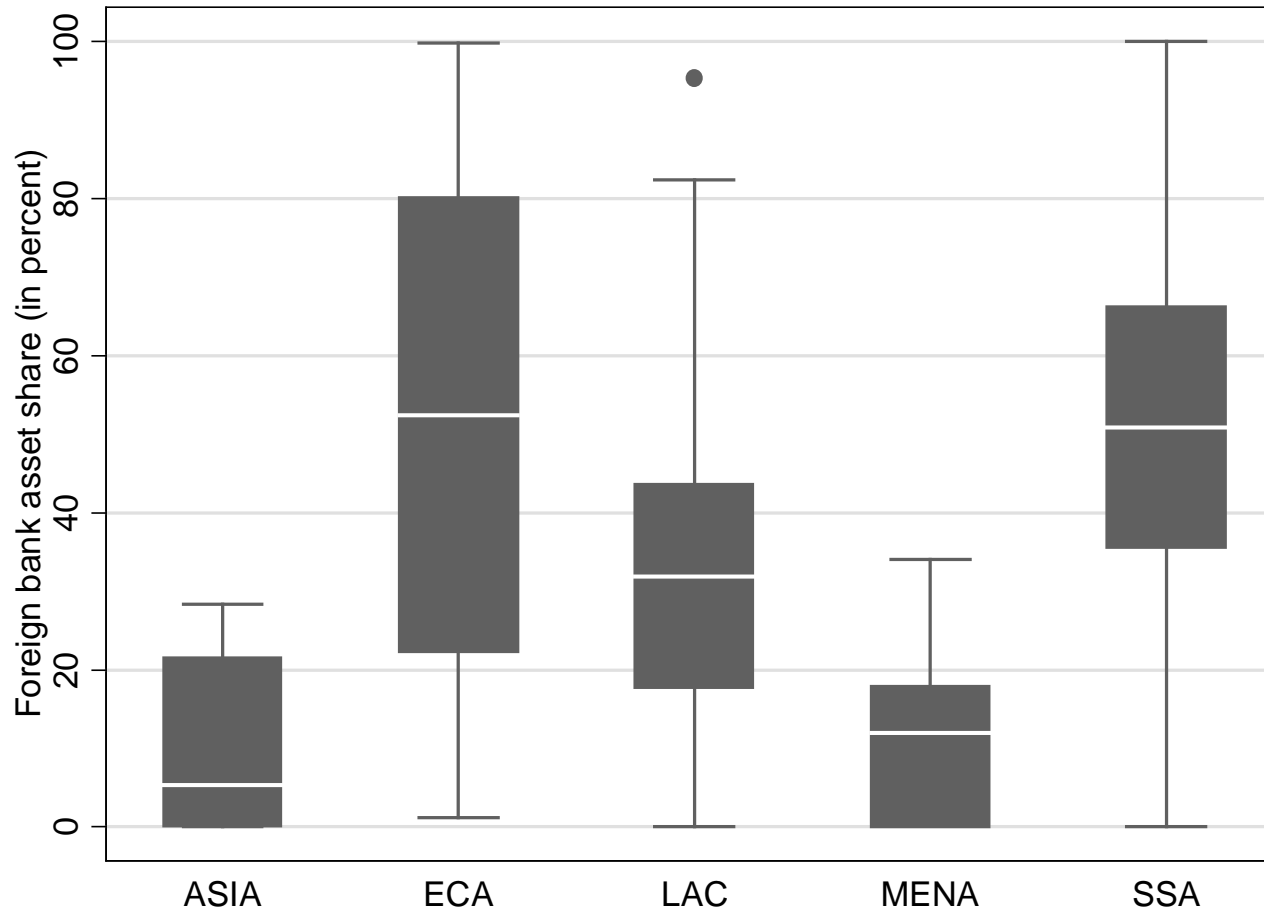
- **we add FIN.OPENNESS and Exportpartner-GDPgrowth as further main determinants**
 - only open economies can be affected
 - Exportpartner-GDPgrowth to avoid endogeneity problems
 - FIN.OPENNESS significantly aggravates $FALL_{flows}$
- **we then control for further potential determinants**
 - INST.QUALITYchange significantly aggravates $FALL_{flows}$
 - FOREIGN LIABILY DOLLARIZATION significantly aggravates $FALL_{credit}$
- **main results hold:**
 - foreign banks stabilize bank flows
 - but they do not stabilize credit growth

- substantial regional differences in the pattern of bank flows, credit growth and foreign bank presence
- does this lead to regional differences in the impact of foreign bank presence?
- foreign banks stabilized bank flows to ECA and SSA
- in SSA this is translated into stable credit growth

Dependent variable: respective FALL measure

	Flows 1/	Credit 2/
SURGE 3/ 4/	0.1327 (0.1072)	0.8223*** (0.1849)
SURGE^2	0.0613*** (0.0114)	
ASIA	0.8206 (1.4784)	-3.1299*** (0.8638)
ECA	0.4927 (1.0166)	-3.9392** (1.7789)
LAC	0.6662 (0.7636)	-2.7359*** (0.9063)
MENA	-0.1713 (1.2129)	-3.1594*** (0.9362)
SSA	1.9421*** (0.6077)	-0.6023 (0.9099)
FBAS*ASIA	0.0349 (0.0436)	0.0215 (0.0253)
FBAS*ECA	-0.0312** (0.0146)	-0.0010 (0.0126)
FBAS*LAC	0.0111 (0.0117)	-0.0049 (0.0056)
FBAS*MENA	0.0447 (0.0524)	0.0323 (0.0268)
FBAS*SSA	-0.0361*** (0.0127)	-0.0391*** (0.0133)
FIN.OPENNESS	0.3439* (0.1988)	0.1374 (0.1003)
ExpP GDP GROWTH	-0.2069 (0.1260)	-0.2368** (0.1158)
INST.QUALITY change	-5.5661* (2.8561)	
FLD		0.0324*** (0.0105)
R-sqr	0.885	0.582
N	91	63

Foreign bank presence



Source: Claessens et al. 2008, own calculations

The line in the box indicates the median, the bottom and the top of the box are the 25th and 75th percentiles and the ends of the whiskers the 5th and 95th percentiles.

Regional or global phenomenon?

→ we group countries according to the banking asset share held by foreign banks

T1	$FBAS \leq 33\%$
T2	$33\% < FBAS \leq 66\%$
T3	$66\% < FBAS \leq 100\%$

→ none of the interactions shows significant impact

→ holds with groups H1 and H2

→ holds with $FBAS^2$

Dependent variable: respective *FALL* measure

	Flows 1/	Credit 2/
SURGE 3/ 4/	0.1232 (0.1081)	0.6411** (0.2776)
SURGE^2	0.0639*** (0.0117)	
T1 /5	0.9982 (0.6311)	-1.6570** (0.7934)
T2	0.5071 (0.9270)	-2.1161** (0.8844)
T3	0.3030 (0.8058)	-2.4837*** (0.7693)
FBAS*T1	-0.0122 (0.0300)	-0.0311 (0.0476)
FBAS*T2	0.0092 (0.0230)	-0.0050 (0.0135)
FBAS*T3	-0.0192 (0.0164)	-0.0101 (0.0069)
FIN.OPENNESS	0.3333* (0.1722)	0.1069 (0.1052)
ExpP GDP GROWTH	-0.0036 (0.0928)	-0.0901 (0.0695)
INST.QUALITY change	-7.1828** (2.9042)	
FLD		0.0267** (0.0103)
R-sqr	0.870	0.453
N	91	63

- **Foreign banks had a stabilizing impact on bank flows but not on credit growth during the global financial crisis**
- **Main destabilizing determinant is pre-crisis boom**
- **Financial openness aggravates instability of bank flows**

- **Impact of foreign banks is not a global but a regional phenomenon**
 - in Eastern Europe and Sub-Saharan Africa foreign banks mitigated the sudden stop in capital flows
 - only in Sub-Saharan Africa foreign banks transformed a higher stability of cross-border flows into a more stable pattern of credit growth – region with the lowest degree of financial openness

→ **Eastern Europe and Sub-Saharan Africa regions with special characteristics**

- Eastern Europe: foreign banks enter extension of home market
- Sub-Saharan Africa: foreign bank presence reflect colonial past

→ **Stabilizing impact of foreign banks for EMEs unclear**

- as regions with significant impact have special features of financial integration
- as crisis has been a global one, triggered in mature economies

→ **Foreign banks no panacea to achieve stability**

Thank you for your attention.

- back up -

Robustness checks – SURGE measures [1/2]

Dependent variable: respective *FALL* measure

	Variation of <i>SURGE</i> period					
	Flows 1/			Credit 2/		
	(1)	(2)	(3)	(4)	(5)	(6)
	(2 years)	(4 years)	(5 years)	(2 years)	(4 years)	(5 years)
FBAS	-0.0222*** (0.0075)	-0.0189** (0.0083)	-0.0179** (0.0082)	-0.0051 (0.0042)	-0.0068 (0.0046)	-0.0067 (0.0047)
SURGE	0.2572*** (0.0559)	0.1285* (0.0682)	0.0865 (0.0589)	0.7447*** (0.1225)	0.6322*** (0.1426)	0.5973*** (0.1428)
SURGE^2	0.0563*** (0.0083)	0.0615*** (0.0095)	0.0655*** (0.0087)			
SURGEalt						
SURGEalt^2						
constant	1.2703** (0.5198)	1.2672** (0.5804)	1.2437** (0.5723)	-0.3390 (0.2564)	-0.0197 (0.2789)	0.0415 (0.2784)
R-sqr	0.651	0.567	0.575	0.331	0.221	0.202
N	95	96	96	78	75	75

Dependent variable: respective FALL measure

	Variation of SURGE calculation method			
	Flows 1/		Credit 2/	
	(7)	(8)	(9)	(10)
	SURGE – pre-shock mean	SURGE-period mean	SURGE – pre-shock mean	SURGE-period mean
FBAS	-0.0195* (0.0116)	-0.0237* (0.0120)	-0.0047 (0.0048)	-0.0045 (0.0045)
SURGE				
SURGE^2				
SURGEalt	-0.0369 (0.0576)	-0.0002 (0.0580)	1.0694*** (0.3206)	1.4644*** (0.3035)
SURGEalt^2	0.0000*** (0.0000)	0.0000** (0.0000)		
constant	5.0533*** (0.5823)	5.3570*** (0.5844)	0.4896* (0.2476)	0.3553 (0.2348)
R-sqr	0.154	0.114	0.140	0.250
N	96	96	75	75

Dependent variable: respective *FALL* measure covering different periods

	<i>FALL</i> from 2006Q3-2007Q2 to 2008Q4-2009Q1		<i>FALL</i> from 2007Q3-2008Q2 to 2008Q4-2009Q2		<i>FALL</i> from 2006Q3-2008Q2 to 2008Q4-2009Q1	
	(1) Flows	(2) Credit	(3) Flows	(4) Credit	(5) Flows	(6) Credit
FBAS	-0.0130 (0.0101)	-0.0075 (0.0046)	-0.0171** (0.0081)	-0.0035 (0.0041)	-0.0150* (0.0078)	-0.0065* (0.0039)
SURGE 1/ 2/	0.0712 (0.0713)	0.7454*** (0.1409)	0.2021*** (0.0573)	0.9103*** (0.1308)	0.1602*** (0.0552)	0.7163*** (0.1188)
SURGE^2	0.0691*** (0.0110)		0.0564*** (0.0088)		0.0582*** (0.0085)	
constant	0.6342 (0.7110)	0.0571 (0.2797)	1.0832* (0.5712)	-0.3647 (0.2654)	1.2399** (0.5503)	-0.0863 (0.2357)
R-sqr	0.464	0.276	0.591	0.416	0.587	0.330
N	97	78	97	71	97	78

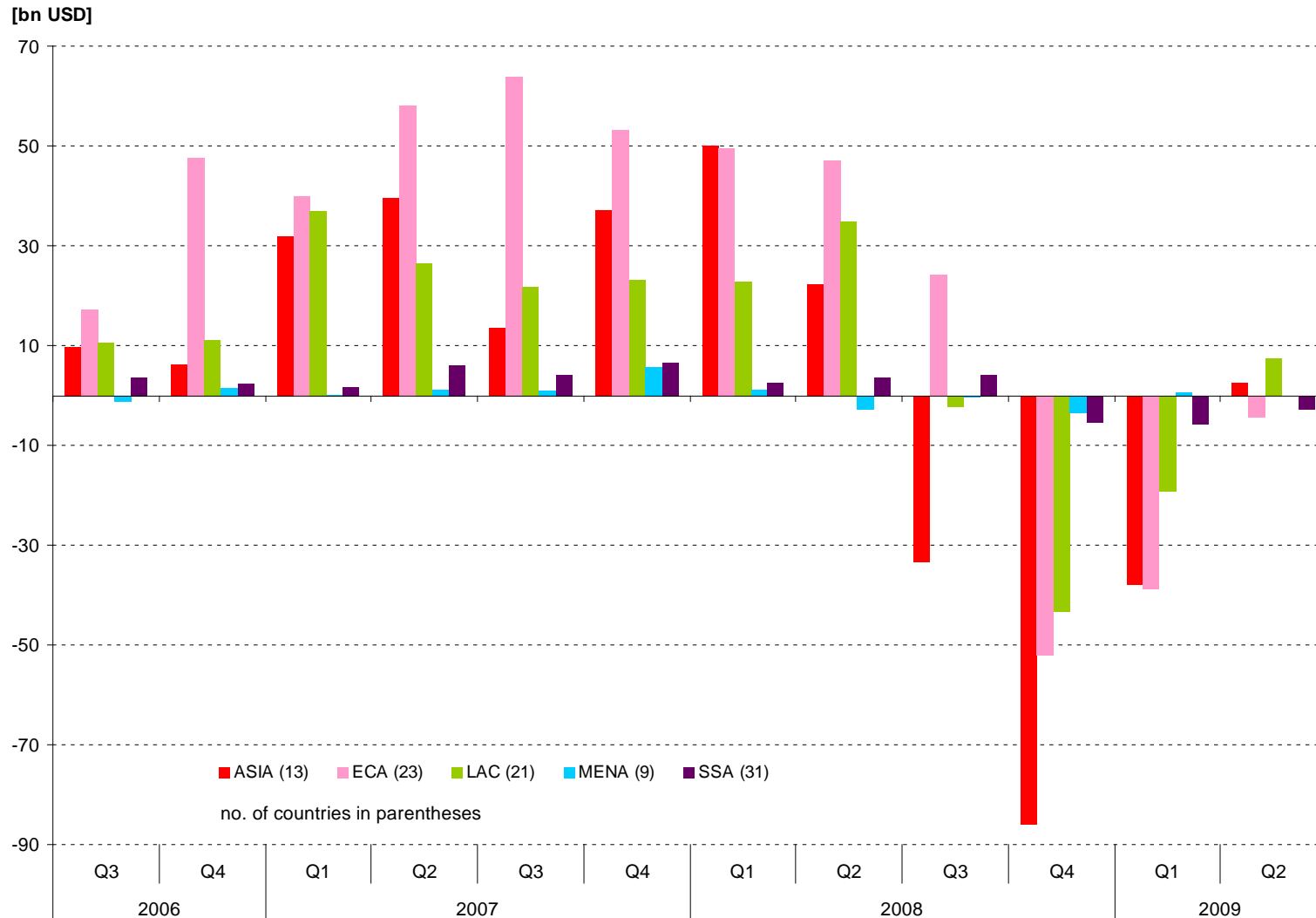
Stars indicate statistical significance at * 10 percent, **5 percent and *** 1 percent level.

Standard errors in parentheses below.

1/ *SURGE* for flows is the (log of the) aggregated capital inflows in the three years preceding the *Lehman* bankruptcy (2005Q3-2008Q2).

2/ *SURGE* for credit is the average m-o-m real credit growth rate in the three years prior to the crisis (i.e. July 2005-June 2008).

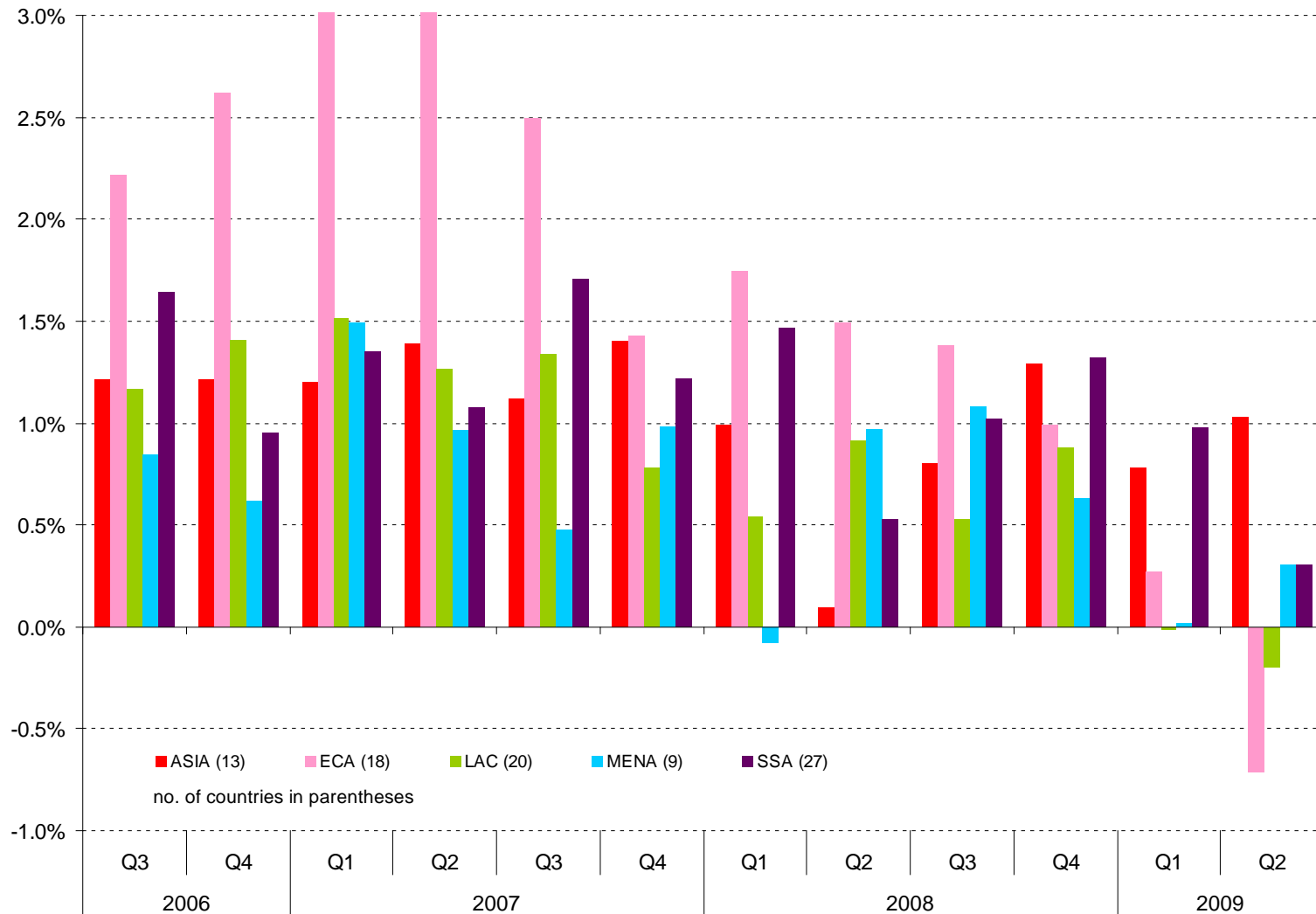
Regional differences in cross-border bank flows



(ASIA: emerging Asia, ECA: Eastern Europe and Central Asia, LAC: Latin American Countries, MENA: Middle East and Northern Africa, SSA: Sub-Saharan Africa)

Source: BIS International locational banking statistics, own calculations

Regional differences in real credit growth



(ASIA: emerging Asia, ECA: Eastern Europe and Central Asia, LAC: Latin American Countries, MENA: Middle East and Northern Africa, SSA: Sub-Saharan Africa)

Source: IFS, national sources, own calculations

- capital flows and credit growth are closely linked
- two models might be related due to common determinants

→ control for the correlation of their error terms

Seemingly unrelated regression estimation

Equation	Obs	Parms	RMSE	R-sqr	Chi2	P
<i>FALLflows</i>	78	3	2.309576	0.5909	114.83	0.0000
<i>FALLcredit</i>	78	2	1.144419	0.2524	26.73	0.0000

	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
<i>FALLflows</i>						
FBAS	-.01626	0087343	-1.86	0.063	-.0333789 .0008589	
SURGEflows	.1371797	067449	2.03	0.042	.0049822 .2693773	
SURGE^2	.0646446	0093888	6.89	0.000	.046243 .0830463	
constant	1.040308	6360204	1.64	0.102	-.2062691 2.286885	
<i>FALLcredit</i>						
FBAS	-.0054514	0043591	-1.25	0.211	-.0139951 .0030923	
SURGEcredit	.6895482	1338541	5.15	0.000	.427199 .9518973	
constant	-.2323562	2663358	-0.87	0.383	-.7543648 .2896524	

<i>FALL</i> _{flows}	difference between the average cross-border bank flows in 2007Q3 - 2008Q2 and the average bank flows in 2008Q4 - 2009Q1 (logs) (<i>BIS locational statistics</i>)
<i>FALL</i> _{credit}	difference between average monthly real credit growth in Sep. 2007 – Aug. 2008 and the average real credit growth in Oct. 2008 – Mar. 2009 (<i>IMF IFS</i>)
<i>FBAS</i>	percentage of assets of foreign banks among total banks (<i>Claessens et al. 2008</i>)
<i>SURGE</i> _{flows}	aggregated cross-border bank flows over the three years prior to the <i>Lehman</i> bankruptcy (i.e. 2005Q3-2008Q2) (logs) (<i>BIS locational statistics</i>)
<i>SURGE</i> _{credit}	average month-on-month real credit growth in the three years prior to the crisis (July 2005-June2008) (<i>IMF IFS</i>)

$$FALL_i = \alpha * FBAS_i + \beta * SURGE_i + \gamma_k * X_{ik} + \varepsilon_i$$

Controls - *FALL*_{flows}

Dependent variable: FALL in cross-border bank flows during the recent financial crisis 1/

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
FBAS	-0.0240*** (0.0084)	-0.0220*** (0.0079)	-0.0239** (0.0096)	-0.0229** (0.0091)	-0.0247*** (0.0093)	-0.0257*** (0.0085)	-0.0262** (0.0101)	-0.0252*** (0.0094)	-0.0229** (0.0091)
SURGE 2/	0.1306 (0.1031)	0.1328 (0.1039)	0.1307 (0.1071)	0.1364 (0.1036)	0.1241 (0.1066)	0.1408 (0.1035)	0.0825 (0.1450)	0.1338 (0.1144)	0.1307 (0.1141)
SURGE^2	0.0608*** (0.0114)	0.0621*** (0.0114)	0.0609*** (0.0106)	0.0598*** (0.0120)	0.0619*** (0.0119)	0.0610*** (0.0110)	0.0667*** (0.0148)	0.0651*** (0.0106)	0.0624*** (0.0115)
FIN.OPENNESS	0.4103** (0.1663)	0.4156** (0.1635)	0.4112** (0.1790)	0.4173** (0.1698)	0.4139** (0.1741)	0.4496*** (0.1696)	0.4034** (0.1781)	0.5191** (0.2044)	0.4335** (0.1717)
ExpP GDP GROWTH	0.0124 (0.0923)	-0.0357 (0.0931)	0.0121 (0.0945)	0.0061 (0.0975)	0.0295 (0.1057)	0.0269 (0.0910)	0.0051 (0.1067)	0.0332 (0.1221)	0.0015 (0.1209)
<i>Structural and macroeconomic variables</i>									
INST.QUALITY change		-6.7917** (2.8790)							
INST.QUALITY			-0.0084 (0.5841)						
CA/GDP				0.0098 (0.0210)					
<i>External and internal vulnerabilities</i>									
DEBT/GNI					0.0039 (0.0067)				
ERR						-0.1206 (0.1230)			
RESERVES/DEBT							-0.0027** (0.0011)		
FLD								0.0120 (0.0232)	
CDR									-0.2409 (0.5769)
constant	1.4413*** (0.5334)	1.3010** (0.5456)	1.4329* (0.8510)	1.4496*** (0.5404)	1.3097** (0.6310)	2.0930*** (0.6188)	1.6626** (0.6831)	0.4296 (2.0068)	1.4775** (0.6732)
R-sqr	0.625	0.639	0.625	0.626	0.611	0.635	0.633	0.616	0.618
N	91	91	91	91	86	90	82	75	87

Dependent variable: FALL in real credit growth during the recent financial crisis 1/

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
FBAS	-0.0081 (0.0055)	-0.0080 (0.0055)	-0.0072 (0.0054)	-0.0099 (0.0088)	-0.0068 (0.0054)	-0.0071 (0.0060)	-0.0075 (0.0056)	-0.0076 (0.0058)	-0.0110* (0.0055)	-0.0087 (0.0054)
SURGEcredit	0.7280*** (0.1742)	0.7479*** (0.1723)	0.7188*** (0.1721)	0.9221*** (0.2242)	0.7328*** (0.1715)	0.6889*** (0.1769)	0.7248*** (0.1753)	0.6922*** (0.1682)	0.7119*** (0.2271)	0.7941*** (0.1501)
FIN.OPENNESS	0.1401 (0.0904)	0.1399 (0.0898)	0.1642* (0.0898)	-0.0351 (0.1430)	0.1500 (0.0927)	0.1353 (0.0920)	0.1166 (0.0920)	0.1412 (0.0954)	0.1285 (0.0970)	0.1573* (0.0903)
ExpP GDP GROWTH	-0.0378 (0.0543)	-0.0471 (0.0553)	-0.0612 (0.0552)	-0.0678 (0.0839)	-0.0464 (0.0555)	-0.0849 (0.0686)	-0.0547 (0.0537)	-0.0340 (0.0660)	-0.0975 (0.0705)	-0.0764 (0.0600)
<i>Structural and macroeconomic variables</i>										
INST.QUALITY change		-1.8070 (3.3366)								
INST.QUALITY			-0.2793 (0.2109)							
CHANGE MMR				-0.2910 (0.2798)						
CA/GDP					0.0126 (0.0139)					
<i>External and internal vulnerabilities</i>										
DEBT/GNI						-0.0086 (0.0059)				
ERR							-0.0388 (0.0545)			
RESERVES/DEBT								0.0017 (0.0036)		
FLD									0.0267*** (0.0095)	
CDR										-0.5692 (0.4130)
constant	-0.2962 (0.2349)	-0.3093 (0.2464)	-0.4539* (0.2573)	-0.3444 (0.4134)	-0.3200 (0.2448)	0.0211 (0.3452)	-0.1498 (0.3872)	-0.3924 (0.3719)	-1.8797*** (0.6351)	0.1075 (0.4029)
R-sqr	0.293	0.298	0.302	0.379	0.301	0.322	0.301	0.289	0.343	0.317
N	75	75	75	42	75	72	74	70	63	75

List of sample countries by region

	ASIA	ECA	LAC	MENA	SSA
1	Bangladesh	Albania	Argentina	Algeria	Angola
2	Cambodia	Armenia	Bolivia	Egypt	Benin
3	China	Azerbaijan	Brazil	Iran	Botswana
4	India	Belarus	Chile	Jordan	Burkina Faso
5	Indonesia	Bosnia & Herzegovina	Colombia	Lebanon	Burundi
6	Malaysia	Bulgaria	Costa Rica	Libya	Cameroon
7	Mongolia	Croatia	Cuba	Morocco	Congo DR
8	Nepal	Estonia	Dominican Rep.	Tunisia	Côte d'Ivoire
9	Pakistan	Georgia	Ecuador	Yemen	Ethiopia
10	Philippines	Kazakhstan	El Salvador		Ghana
11	Sri Lanka	Kyrgyz Republic	Guatemala		Kenya
12	Thailand	Latvia	Haiti		Madagascar
13	Vietnam	Lithuania	Honduras		Malawi
14		Macedonia, FYR	Jamaica		Mali
15		Moldova	Mexico		Mauritania
16		Poland	Nicaragua		Mauritius
17		Romania	Panama		Mozambique
18		Russia	Paraguay		Namibia
19		Serbia	Peru		Niger
20		Slovenia	Uruguay		Nigeria
21		Turkey	Venezuela		Rwanda
22		Ukraine			Senegal
23		Uzbekistan			Seychelles
24					South Africa
25					Sudan
26					Swaziland
27					Tanzania
28					Togo
29					Uganda
30					Zambia
31					Zimbabwe

Descriptive statistics [1/3]

Variable	Region	Obs	Mean	Std. Dev.	Min	Max
<i>FALL flows</i>	ASIA	13	5.974	4.300	-5.857	10.791
	ECA	23	5.555	4.108	-4.794	10.485
	LAC	21	6.263	2.040	1.609	10.225
	MENA	9	4.680	2.630	-1.833	6.698
	SSA	31	2.422	3.190	-3.624	8.601
	all	97	4.682	3.662	-5.857	10.791
<i>FALL credit</i>	ASIA	10	0.251	1.273	-2.113	2.449
	ECA	16	1.184	1.506	-2.648	3.197
	LAC	20	0.458	0.830	-1.435	1.450
	MENA	7	0.211	0.902	-0.824	1.823
	SSA	25	0.275	1.582	-2.403	5.043
	all	78	0.500	1.332	-2.648	5.043
FBAS	ASIA	13	10.52	11.13	0	28.30
	ECA	23	49.73	33.35	1.21	99.76
	LAC	21	35.37	27.15	0	95.35
	MENA	9	12.11	11.50	0	34.04
	SSA	31	49.53	29.20	0	100
	all	97	37.81	30.72	0	100

Descriptive statistics [2/3]

Variable	Region	Obs	Mean	Std. Dev.	Min	Max
<i>SURGE</i> flows	ASIA	13	5.472	6.183	-7.702	11.763
	ECA	23	7.810	3.866	-6.105	11.806
	LAC	21	5.200	5.822	-8.091	11.525
	MENA	9	3.834	6.834	-8.483	9.263
	SSA	31	3.389	4.607	-6.897	9.314
	all	97	5.150	5.354	-8.483	11.806
<i>SURGE</i> credit	ASIA	12	1.098	0.872	0.067	2.842
	ECA	17	2.400	0.737	1.062	3.643
	LAC	20	1.076	0.629	-0.169	2.664
	MENA	8	0.714	0.430	-0.067	1.221
	SSA	27	1.172	1.036	-0.047	4.065
	all	84	1.344	0.975	-0.169	4.065
FIN.OPENNESS	ASIA	13	-0.313	1.005	-1.129	1.27
	ECA	22	0.712	1.541	-1.129	2.54
	LAC	20	1.583	1.140	-0.764	2.54
	MENA	9	0.492	1.722	-1.129	2.54
	SSA	30	-0.548	1.362	-1.808	2.54
	all	94	0.332	1.564	-1.808	2.54

Variable	Region	Obs	Mean	Std. Dev.	Min	Max
INST.QUALITY change	all	97	0.018	0.068	-0.332	0.159
INST.QUALITY	all	97	-0.371	0.592	-1.687	1.153
ExpP GDP GROWTH	all	94	-1.625	2.448	-7.698	4.197
CHANGE MMR	all	52	-0.041	0.632	-0.785	3.164
CA/GDP	all	96	-3.269	10.762	-25.185	40.655
DEBT/GNI	all	90	41.313	31.417	3.522	166.815
ERR	all	95	5.116	2.209	1	8
RESERVES/DEBT	all	86	122.588	341.332	1.471	2435.307
FLD	all	76	63.040	16.260	20.236	95.863
CDR	all	92	0.935	0.424	0.257	2.390

Name	Description	Source
<i>FALL</i> _{flows}	difference between the average cross-border bank flows in 2007Q3 - 2008Q2 and the average bank flows in 2008Q4 - 2009Q1 (logs)	BIS International locational banking statistics, Table 6A
<i>SURGE</i> _{flows}	aggregated cross-border bank flows over the three years prior to the <i>Lehman</i> bankruptcy (i.e. 2005Q3-2008Q2) (logs)	
<i>FALL</i> _{credit}	difference between average monthly real credit growth in Sep. 2007 - Aug. 2008 and the average real credit growth in Oct. 2008 - Mar. 2009, seasonally adjusted rates	IFS: credit to private sector (line 22d), CPI (line 64) and national sources; seasonal adjusted with Census X-12
<i>SURGE</i> _{credit}	average month-on-month real credit growth in the three years prior to the crisis (July 2005-June2008), seasonally adjusted rates	
FBAS	percentage of assets of foreign banks among total banks in 2005	Claessens et al. (2008)
FIN.OPENNESS	Chinn-Ito-Index value for de-jure financial openness in 2007	Chinn and Ito (2008)
INST.QUALITY	average of the six individual WGI governance indicators in 2008	Kaufmann et al. (2009)
INST.QUALITY change	change of INST. QUALITY from 2007 to 2008	
ExpP GDP GROWTH	real GDP growth of the 30 main export partners weighted by their participation in the total exports to them in 2009	IMF DOTS, WEO
CHANGE MMR	percentage change in the money market rate between Sept. 2008 and March 2009	IFS (line 60b)
CA/GDP	current account balance in percent of GDP in 2007	IMF WEO
DEBT/GNI	total external debt stocks to gross national income in 2007	WDI, World Bank
ERR	classification of exchange rate regime as of end of 2007	Bubula and Ötoker-Robe (2002)
RESERVES/DEBT	total reserves (% of total external debt) in 2007	WDI, World Bank
FLD	share of total foreign liabilities denominated in foreign currency in 2004	Lane and Shambaugh (2010)
CDR	private credit by deposit money banks as a share of demand, time and saving deposits in deposit money banks in 2007	Beck and Demirgüç-Kunt (2009)
NPL	bank nonperforming loans to total loans in 2007	Global Financial Stability Report 2009, IMF