European Bank
for Reconstruction and Development

Foreign banks and the Vienna Initiative: turning sinners into saints

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Abstract

We use data on 1,294 banks in emerging Europe to analyse how bank ownership and the Vienna Initiative affected credit growth during the 2008-09 crisis. As part of the Vienna Initiative western European banks signed country-specific commitment letters in which they pledged to maintain exposures and to support their subsidiaries in emerging Europe. We show that in general both domestic and foreign banks sharply curtailed credit during the crisis, but that foreign banks that participated in the Vienna Initiative were relatively stable lenders. We find no evidence of negative spillovers from countries where banks signed commitment letters to countries where they did not.

Keywords: Foreign banks, Vienna Initiative, financial crisis, state support

JEL Classification Number: C23, F36, G21, P34

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The authors would like to thank Bas Bakker, Erik Berglöf, Hans Degryse, Zuzana Fungáčová, Mark Griffiths, Anne-Marie Gulde, Simon Johnson, Hannah Levinger, Elitza Mileva, Piroska M. Nagy, Katharina Pistor, Alberto F. Pozzolo, Jerome Vandenbussche, Neeltje Van Horen, Veronika Zavacka, Jeromin Zettelmeyer, and seminar participants at the Bank of England, EBRD, International Monetary Fund, Kyiv School of Economics, National Bank of Georgia, National Bank of Moldova, University of Tilburg, the 9th ECB/Bundesbank Workshop on Emerging Markets, and the MoFiR Workshop on Banking (Ancona) for useful comments.

Working Paper No. 143 **Prepared in March 2012**

1. Introduction

The start of the transition process in 1989 heralded the large-scale entry of foreign banks into emerging Europe. Western European banks with saturated home markets were attracted to the transition region due to its scope for financial deepening and its ample growth potential. Policy-makers and development institutions stimulated financial integration because of its presumed positive impact on the efficiency and stability of local banking systems. The empirical evidence that emerged over the next two decades suggests that foreign bank entry indeed stimulated competition and transferred know-how (Fries and Taci, 2005; Havrylchyk and Jurzyk, 2011) and that foreign banks were relatively stable credit sources during local financial turmoil (De Haas and Van Lelyveld, 2006).

The global financial crisis of 2008-09 put this model of intense cross-border banking to the test. The crisis was unique in that it emanated from the *home* markets of the banking groups operating in emerging Europe. Although few of these large banks had direct US sub-prime exposures, most of them were affected by the sharp reduction in interbank liquidity as of the second half of 2007. Banks started to deleverage both at home and abroad, a process that accelerated after the collapse of Lehman Brothers in September 2008 (Cetorelli and Goldberg, 2011; De Haas and Van Horen, 2012). It became increasingly uncertain whether multinational banks, now battered by problems elsewhere, would keep funding eastern European customers through their local subsidiaries.

In response to these mounting pressures, Western governments supported various banks with guarantees as well as capital and liquidity injections towards the end of 2008. This alleviated concerns about a credit crunch "at home" but did not reduce worries about a retrenchment of multinational banks from emerging Europe. On the contrary, concerns were raised that government support came with "strings attached". Anecdotal evidence suggests that banks were indeed asked to focus on domestic lending (Kamil and Rai, 2010). For instance, French banks that received state support had to increase domestic lending by 3-4 per cent annually, while Dutch bank ING announced that it would lend US$ 32 billion to Dutch borrowers in return for government support (World Bank, 2009, p. 70).

Tightening funding constraints and potentially biased government interventions raised concerns about an uncoordinated rush of banks out of emerging Europe. Although

most banks confirmed their commitment to the region during the early stage of the crisis, there was no formal policy framework or coordination mechanism in place to ensure these commitments were credible. The fear was that while it would be in the collective interest of banks to roll-over debt to emerging Europe, the absence of a coordination mechanism could lead individual banks to withdraw, ultimately causing a "run" on the region. The absence of agreements on how to share the burden of a defaulting subsidiary between the fiscal authorities in the home and host countries further exacerbated the risk of such a run. The accompanying decline or reversal in financial flows would not only have had dire consequences for local firms and households but would also have led to large exchange-rate fluctuations and balance of payments problems.

In response to this institutional vacuum, the Austrian government and a number of multinational banks with high exposure to emerging Europe started to engage in informal discussions towards the end of 2008. The goal of this Vienna Initiative (VI)[1] was to avoid collective action problems (Pistor, 2011) and to guarantee macroeconomic stability in emerging Europe. Soon the VI meetings also included the main international financial institutions (IFIs), ministries of finance, central banks and bank regulators from the host and home countries of the main multinational banks, as well as the European Union and the European Central Bank.

In February 2009 the European Bank for Reconstruction and Development (EBRD), European Investment Bank (EIB) and the World Bank Group launched, within the context of the VI, a "Joint IFI Action Plan in support of banking systems and lending to the real economy in Central and Eastern Europe". The goal was to mobilise resources from these institutions to avert a banking crisis and support bank lending in the region. This support was integrated with IMF and European Union macro-financial support programmes to Bosnia and Herzegovina, Hungary, Latvia, Serbia and Romania.

In return for these countries' commitment to keep their programmes on track and for financial support under the Joint IFI Action Plan, a number of multinational banks signed country-specific commitment letters in which they pledged to maintain cross-border exposures and to continue to provide credit to firms and households. To do so,

[1] The name later changed to European Bank Coordination Initiative. Levinger (2010) provides a historical overview of the VI.

banks confirmed that they would keep subsidiaries adequately capitalised and provide them with sufficient liquidity. The VI thus developed into a comprehensive public-private partnership that combined macro-financial support by the IMF and the European Union (a "bail-out") with funding by various development institutions and a coordinated "bail in" of private lenders.

Although a large-scale, uncoordinated withdrawal of banks from emerging Europe did not materialise – and the VI can therefore be considered successful *stricto sensu* – as yet virtually no empirical analysis has been undertaken to assess its impact.[2] No evidence is available on the role played by banks that were part of the VI versus those that were not. Likewise, for those multinational banks that were part of the VI, no comparison has been made between their lending behaviour in countries where they signed commitment letters and countries where they did not. It also remains unclear whether signing commitment letters may have led to negative spillovers to other countries.

We employ a comprehensive bank-level dataset to fill these gaps in the literature. This is important as part of a thorough ex post evaluation of the VI and of the effectiveness of private-sector "bail-ins" more generally. Our results also inform the current policy debate on similar initiatives against the background of the European sovereign debt crisis and its negative effect on international bank lending. With "Vienna 2.0" in the making, it is important to have a better understanding of the effectiveness of the original Vienna Initiative.

Our empirical results indicate that both foreign and domestic banks sharply curbed credit growth during the crisis. While we find no impact of home-country state support packages on lending by foreign bank subsidiaries, we do find that banks that took part in the VI were relatively stable lenders. Moreover, VI banks did not retrench from non-VI countries in order to maintain exposures to countries where they signed commitment letters. If anything, participation in the VI led to positive rather than negative spillover effects to other countries. Finally, state-owned domestic banks were relatively stable lenders during the financial crisis.

These results allow us to contribute to three strands of the literature. First, we shed light on the implications of foreign bank entry for financial stability. Morgan, Rime

[2] An exception is Cetorelli and Goldberg (2011) who, on the basis of country-level data, show that the decline in domestic bank lending was somewhat mitigated in the case of VI countries.

and Strahan (2004) present a model in which multinational banks, by reallocating scarce capital across borders, absorb local shocks and transmit foreign shocks. The empirical literature finds evidence for both these roles. As regards the former, De Haas and Van Lelyveld (2006) find for emerging Europe that during past bouts of financial turmoil lending by foreign banks was more stable than lending by domestic banks. De Haas and Van Lelyveld (2010) present similar evidence for a broader set of countries and banks. In line with these findings, Dinger (2011) shows for emerging Europe that the presence of multinational bank subsidiaries eases aggregate liquidity shortages during local crises.

As regards the role of multinational banks as shock transmitters, Peek and Rosengren (1997, 2000) demonstrate how the drop in Japanese stock prices in 1990 led Japanese bank branches in the United States to reduce lending. Schnabl (2012) analyses how the 1998 Russian crisis spilled over to Peru as banks, including multinational bank subsidiaries, saw their foreign funding decline and had to reduce local lending. Chava and Purnanandam (2011) find similar evidence for US banks.

More recently, studies have started to assess whether multinational banks also transmitted the 2008-09 crisis across borders. De Haas and Van Lelyveld (2011) use an international dataset and find that multinational bank subsidiaries curtailed credit more aggressively than domestic banks. Domestic banks, which relied more on local deposits to fund credit growth, were better positioned to continue to lend. In line with this, Popov and Udell (2012) show how multinational banks transmitted the crisis to emerging Europe and that the severity of shock transmission depended on the strength of parent banks' balance sheets. Ongena, Peydró and Van Horen (2012) also focus on emerging Europe. They use data on bank-firm relationships and show that not only foreign banks but also domestic banks that before the crisis had borrowed in the international wholesale markets, had to cut back lending more during the crisis. Yet, Barba Navaretti, Calzolari, Pozzolo and Levi (2010) stress that multinational banks were a stabilising force in Europe as they displayed a relatively stable loan-to-deposit ratio. Their analysis focuses on the years 2007-08 while, as we show in this paper, much of the reduction in lending only took place in 2009.

Second, our paper adds to the empirical literature on the impact of state support and state ownership on credit growth. Rose and Wieladek (2011) find for the recent crisis that foreign banks in the United Kingdom reduced their lending and increased interest

rates when they were nationalised in their home country. Brei, Gambacorta and Von Peter (2011) provide evidence that suggests that recapitalisations during the global financial crisis did not boost bank lending except for those banks with a capital ratio above a certain threshold. Micco and Panizza (2006) show that lending by state banks is less procyclical than lending by private banks as governments use state banks to smooth credit over the business cycle. Mian (2006) also finds that lending by state banks is less volatile in the face of macroeconomic shocks. Our paper provides a systematic comparison of foreign, private domestic and state banks, to assess the impact of state ownership and state support during the recent crisis.

Third, our results provide evidence on the possible catalytic effect of crisis funding by an international lender of last resort like the IMF. A theoretical literature has developed to understand the conditions under which (limited) IMF funding, by acting as a seal of approval of a country's reform efforts, may help close an external funding gap and prevent a balance of payments crisis. Such a catalytic effect materialises if an IMF programme nudges private creditors to roll over their commitments. Corsetti, Guimarães and Roubini (2003) show how contingent support can reduce the range of economic fundamentals at which international investors find it optimal to withdraw from a country. In a similar vein, Morris and Shin (2006) demonstrate that catalytic finance works if it provides a country with incentives to keep up adjustment efforts without distorting creditors' roll-over decisions.

The empirical evidence on the effectiveness of contingent support is scarce. Cottarelli and Giannini (2002) conclude that IMF interventions typically result in only small increases in private capital. Corsetti and Roubini (2004) analyse a number of case studies and draw a slightly more positive conclusion. They highlight two relative success stories, Korea (1997) and Brazil (1999), where IMF lending was accompanied by roll-overs of interbank credit lines (in Korea short-term interbank lines were converted into longer and government-guaranteed bonds). In both cases – similar to the VI – roll-overs were neither completely voluntary nor uncoordinated (as in a 'pure' catalytic approach) and systems were put in place to monitor roll-over rates. The official sector organised a concerted private sector involvement to resolve collective action problems.[3]

[3] In 1998, Brazil initially limited its role to collecting data on roll-over rates and sharing these with the IMF, without actively encouraging banks to maintain their cross-border lending. This soft monitoring

Our paper contributes to this literature by analysing the impact of the combination of IMF funding and active creditor coordination. Instead of focusing on the narrow impact of the VI on the participating countries' external funding gaps, we use bank-level data to analyse how banks' roll-over commitments ultimately influenced their lending across various VI and non-VI countries.

We proceed as follows. Section 2 provides more details about the VI, after which Section 3 describes our data. Section 4 then explains our empirical methodology and Section 5 summarises our empirical results. Section 6 concludes.

without real "bite" did not succeed in stemming a sharp reduction in international bank exposure to Brazil. A similarly soft monitoring arrangement in Turkey in 2002 proved to be a paper tiger as well (Roubini and Setser, 2004, p.150).

2. The Vienna Initiative

The VI came into being in the autumn of 2008 when fears were growing about the vulnerability of emerging Europe to withdrawals by multinational banks.[4] Rapid credit growth before the crisis had left the private sector in many countries highly leveraged. A sharp reduction in multinational banks' funding to their subsidiaries would not only have caused a reduction in lending and asset prices, but most likely would also have led to severe macroeconomic destabilisation.

In November 2008 a number of pan-European banks with a large presence in emerging Europe sent a letter to the European Commission, copying the EBRD and EIB, to call for a quick and coordinated response to the problems in emerging Europe and, more specifically, to ensure sufficient funding for banks operating in the region. In response the VI was created as a coordination platform for multinational banks, their home and host country supervisors, fiscal authorities, the IMF and development institutions to safeguard a continued commitment of parent banks to their subsidiaries.[5] In addition, the European Commission ensured that banks benefiting from state support would not be forced to downsize their presence in emerging Europe. In March 2009, an emergency summit of EU leaders confirmed that bank support packages at the national level should not lead to any restrictions on banks' eastern European subsidiaries.

On 27 February 2009 the EBRD, EIB and the World Bank Group launched the "Joint IFI Action Plan in support of banking systems and lending to the real economy in Central and Eastern Europe" with the objective "to support banking sector stability and lending to the real economy in crisis-hit Central and Eastern Europe".[6] During spring 2009 these institutions met several times with 17 banking groups that covered over 60 per cent of all banking assets in the region. The meetings led to a "joint needs assessment" that resulted in financial support packages for individual banking groups. In aggregate, the institutions committed to a funding package of €24.5 billion to support large cross-border banks. By the end of September 2009, banks had received

[4] Table A7 in the Annex provides a timeline of the VI.
[5] Impromptu coordination was necessary since burden sharing in the case of a failing European cross-border bank effectively depends on ex post negotiations between countries. Such improvised cooperation (Freixas, 2003) or ex post bargaining is prone to coordination failures.
[6] See www.ebrd.com/pages/news/press/2009/090227.shtml for details.

€16.3 billion of IFI support in the form of senior loans, tier 1 and 2 capital, trade finance, facilities for small business loans and syndicated loans.[7]

The Joint IFI Action Plan was embedded in a broader policy coordination framework by linking it to the IMF and EU stabilisation programmes. IMF programmes were introduced in various countries when substantial amounts of foreign currency debt matured and external financing gaps opened up. Part of this debt was issued by multinational banks active in the region and insufficient roll-overs would have compromised the success of IMF-EU balance of payments stabilisation programmes. The authorities were wary not to substitute commercial funding with public sector money; the goal was to keep commercial banks "bailed in" rather than bailed out. Debt roll-overs by commercial banks were therefore part of the burden-sharing agreements alongside macroeconomic support. Bank commitments consisted of strong mutual agreements that were nevertheless voluntary and not an explicit pre-condition for balance of payments support.

In five countries – Bosnia and Herzegovina, Hungary, Latvia, Romania and Serbia – a total of 17 parent banks pledged, via so-called commitment letters, to maintain their overall exposures and to recapitalise subsidiaries for the duration of the IMF/EU programmes.[8] Importantly, the banks that signed differed by country as did the exact nature of the commitments. In the case of Latvia, the assumption was that Swedish banks would roll-over at least 80 per cent of their lending to the country, the majority of which was to their own subsidiaries. In the case of Hungary, banks promised to ensure a "prudent capitalization of their subsidiaries" and to maintain at least 95 per cent of their September 2008 exposure. In Romania the pledges were most concrete as banks promised to "increase the minimum capital adequacy ratio for each subsidiary from 8 to 10 percent" and to fully maintain their March 2009 exposure for the time of the IMF programme. Also in Bosnia and Herzegovina and in Serbia banks committed to roll-over 100 per cent of their exposure (as of December 2008) and to recapitalise subsidiaries if and when needed. Some of these commitments were reaffirmed later on

[7] Progress Report 2009 (p. 4) and Final Report 2011 (p. 5). By the end of December 2010, €33.2 billion had been made available.

[8] Commitment letters were signed for Romania and Serbia in March 2009, Hungary in May 2009, Bosnia and Herzegovina in June 2009, and Latvia in September 2009. Belarus and Ukraine had an IMF programme but no commitment letters were signed.

in 2009.[9] As the crisis subsided, pressure to maintain cross-border exposures was reduced and some roll-over commitments were lowered by early 2010.

At the time concerns were expressed that the focus of the commitment letters on five core countries could tempt multinational banks to support these countries by withdrawing funds from countries without exposure commitments (such as Poland and the Czech Republic). Negative spillovers could have contributed to the cross-border transmission of the crisis (Keller, 2009; Mitra, Selowsky and Zalduendo, 2010). These concerns were alleviated by a number of informal agreements that extended the informal commitments of EBRD-supported banks to emerging Europe as a whole. Moreover, in September 2009 and March 2010 "horizontal meetings" were held with various multinational banking groups as well as the relevant national and international authorities (see Table A5 in the Annex). The focus of these meetings was on lending to the region as a whole rather than the five countries with an IMF/EU programme and explicit exposure commitments.

[9] In Romania, parent banks ultimately did not maintain full exposures. With the exception of three banking groups, parent bank financing declined before the commitments were reaffirmed (see IMF, *Romania: Letter of Intent and Technical Memorandum of Understanding*, February 2010).

3. Data and descriptive statistics

Our main data consist of a panel of balance sheet and income statement data for 1,294 banks in emerging Europe during 1999-2009.[10] The source is Bureau van Dijk's BankScope database and all data are denominated in US dollars to ensure comparability across banks. We disregard banks for which we have less than three consecutive years of data. The panel is unbalanced as we do not have information for each bank in each year. For the crisis year 2009 the dataset contains 1,098 banks. We combine these data with macroeconomic information from the IMF International Financial Statistics.

In addition, we hand-collect information on crisis-related government support to banks in both home and host countries. We take this information from various publications by the European Commission[11] and IMF, Reuters news service, and bank web sites. We capture support in the form of capital injections, bank-specific guarantees, and asset sales to the government. For each bank we also analyse whether one or several of the three main development institutions operating in emerging Europe – the EBRD, World Bank Group and the European Investment Bank – were lending to the bank or had an equity participation in it before the crisis.

Finally, we collect information about the development of the ownership structure of each bank over time. Bank-specific and time-varying information on ownership is crucial as the process of foreign bank entry differed considerably across countries in terms of intensity and timing. For the period 1999-2004, ownership information is taken from De Nicolò and Loukoianova (2007). For later years we manually pull information from bank web sites and annual reports. For foreign bank subsidiaries we trace back in which year *t* they became part of a group. For newly established subsidiaries by parent banks, we then use data from year *t* onwards. For subsidiaries that are the result of a takeover, we only use data from year *t+1* onwards. In this way we take into account that after a take-over the influence of the new parent bank is not immediate but only noticeable when the integration process is well under way. If

[10] Our definition of emerging Europe comprises Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Georgia, Hungary, Kazakhstan, Kyrgyz Republic, Latvia, Lithuania, FYR Macedonia, Moldova, Mongolia, Montenegro, Poland, Romania, Russia, Serbia, Slovak Republic, Slovenia, Tajikistan, Turkey, Turkmenistan, Ukraine and Uzbekistan.
[11] In particular European Commission memorandum no. 10/284, *State aid: Overview of national measures adopted as a response to the financial/economic crisis*, Brussels, 29 June 2010.

parent banks merge during year *t* we include the merged entity from *t+1* onwards for similar reasons.

Our main dependent variable is annual gross nominal credit growth. We define gross nominal credit as net loans plus loan loss reserves. This definition corrects for changes in (net) loans that are not due to changes in banks' output of new loans but are caused by changes in loan loss provisioning and write-offs.[12] If certain banks provisioned more during the crisis than others, this should therefore not bias our dependent variable. The same holds for state banks that may have provisioned very little and instead "ever-greened" non-performing loans. To exclude observations related to mergers and acquisitions we trim the 1 per cent observations with the highest loan growth.

Table 1 summarises the development of credit growth across emerging Europe. After abundant annual growth during 1999-2007 – of on average 50 per cent – lending slowed markedly in 2008 and further in 2009. Before the crisis, credit growth was somewhat higher among foreign banks and this difference was most pronounced in south-eastern Europe (SEE). Foreign bank subsidiaries typically had easier access to foreign funding – either from international capital markets or from their parent banks (De Haas and Naaborg, 2006) – and were less constrained by the availability of local funding.

During the crisis, both foreign and domestic banks cut credit growth significantly. In SEE, foreign banks reduced growth relatively fast in 2008 when compared with the very high pre-crisis rates of expansion. In absolute terms, credit growth of domestic and foreign banks in central and eastern Europe and the Baltic states (CEB) and SEE converged in 2008 and 2009.

In the Commonwealth of Independent States (CIS), Russia and Turkey foreign banks did relatively well during the crisis as domestic banks decelerated at a fast pace. Kazakh, Russian and Ukrainian domestic banks had leveraged themselves with large amounts of foreign debt that they now found difficult to roll over. Note that lending by state banks held up quite well in 2009 in the CIS and SEE.[13]

[12] Our results continue to hold when we use net loans as our dependent variable (see Table 4).
[13] For instance, VTB – Russia's second largest (and state-owned) bank – grew by 53 per cent in 2009 while Gazprombank, another large Russian state bank, increased credit by 38 per cent. In south-eastern

Table 1 Credit growth across emerging Europe

Region	Bank ownership	No. bank-year obs.	No. banks	Average annual credit growth		
		1999-2009	2009	1999-2007	2008	2009
		(1)	(2)	(3)	(4)	(5)
CEB	Domestic state	94	11	0.27	0.09	0.11
	Domestic private	497	39	0.32	0.17	0.07
	Foreign	748	75	0.39	0.14	0.06
	Vienna	*74*	*8*	*0.45*	*0.13*	*-0.05*
	Non-Vienna	*674*	*67*	*0.38*	*0.15*	*0.07*
	Total	**1,339**	**125**	**0.36**	**0.16**	**0.07**
SEE	Domestic state	79	6	0.36	0.22	0.19
	Domestic private	340	23	0.49	0.21	0.09
	Foreign	527	74	0.67	0.26	0.05
	- Vienna	*165*	*24*	*0.78*	*0.20*	*0.06*
	- Non-Vienna	*362*	*50*	*0.63*	*0.28*	*0.05*
	Total	**946**	**103**	**0.57**	**0.24**	**0.07**
CIS	Domestic state	129	14	0.47	0.52	0.14
	Domestic private	675	57	0.64	0.28	-0.06
	Foreign	311	58	0.66	0.43	0.00
	Total	**1,115**	**129**	**0.62**	**0.36**	**-0.01**
Russia	Domestic state	173	38	0.53	0.50	0.06
	Domestic private	2,463	632	0.51	0.50	0.00
	Foreign	192	38	0.53	0.44	0.15
	Total	**2,828**	**708**	**0.51**	**0.50**	**0.01**
Turkey	Domestic state	25	4	0.19	0.09	0.22
	Domestic private	137	17	0.44	-0.05	0.13
	Foreign	89	12	0.44	0.05	0.18
	Total	**251**	**33**	**0.41**	**0.00**	**0.16**

Note: This table shows the number of bank-year observations, the number of banks, and average annual credit growth by region and by bank ownership before and during the 2008-09 crisis. Growth rates are averaged over banks and weighed by total assets. State banks are more than 30 per cent owned by the state. Domestic private banks are majority owned by domestic private shareholders. Foreign banks are majority foreign owned. Vienna banks are subsidiaries of foreign banks that were part of the Vienna Initiative. CEB is Central Europe and the Baltic States. SEE is south-eastern Europe. CIS is the Commonwealth of Independent States. Source: BankScope

When we compare those foreign banks in CEB and SEE that became part of the VI in 2009 with those that did not, it becomes clear that the former were among the fastest growing banks in emerging Europe before the crisis (this difference is statistically significant at the 1 per cent level). During the crisis, both types of foreign banks slowed down their lending and in 2009 credit even contracted for VI banks in CEB.

In sum, Table 1 indicates that in CEB and SEE foreign banks grew faster than domestic banks before the crisis. During the crisis, both types of banks displayed low but similar growth rates, implying that foreign banks had to decelerate more. Further

Europe, Bulgarian Municipal Bank grew by 13 per cent and Slovenian Banka Celje by 11 per cent during 2009.

east, foreign and domestic banks had been growing at similar rates before the crisis, but domestic banks had to cut lending more once the crisis struck.

Tables A1 to A3 in the Annex provide variable definitions, descriptive statistics, and a correlation matrix. In our sample, 29 per cent of banks are foreign owned, 63 per cent domestic private banks, and 8 per cent state-owned banks. About 4 per cent of all banks received some form of government support (excluding the VI) during the crisis years 2008-09. Banks' loan-to-deposit ratio, an indicator of their use of wholesale funding, was on average 91.4 per cent. However, variation is large with some banks operating at considerably higher ratios, in particular at the height of the pre-crisis credit boom. Loan quality varies significantly, with the ratio of loan loss reserves to gross loans lower among foreign banks (4.5 per cent) and higher among state banks (6.8 per cent).

Tables A4 and A5 in the Annex provide an overview of the banks that participated in the VI and the specific countries in which they signed commitment letters. Importantly, in each of the five VI countries there were two groups of foreign bank subsidiaries: those with parents that were part of the VI in that country and those with parent banks that were not. For instance, in Hungary UniCredit and Raiffeisen Bank signed a commitment letter whereas Commerzbank and Deutsche Bank did not.

The table also shows variation among subsidiaries according to whether their parent banks received government support or not. For instance, Commerzbank received capital support from the German government whereas Deutsche Bank did not. Moreover, note that parent banks signed commitment letters in some countries but not in others. Erste Bank signed a letter in Hungary but not in Serbia. Similarly, NLB Bank committed to rollovers in Bosnia and Herzegovina but not in Serbia. These are the sources of between-bank and within-bank variation that we exploit in this paper.

The decision of a parent bank to participate in the VI and to sign commitment letters in specific countries was not random. Table A6 provides a probit analysis to analyse what determined a bank's VI status. We assess the impact of both parent bank and subsidiary characteristics. The results indicate that large banks – in terms of both the asset size of the subsidiary and the regional exposure of the parent bank (number of subsidiaries in emerging Europe) – were more likely to be part of the VI. Parents of

subsidiaries with relatively low loan quality (high loan-loss reserves) were also more likely to sign commitment letters as were parent banks with lower tier 1 capital ratios.

These results indicate that while VI banks were on average larger, they were also less well capitalised, and carried more non-performing loans. These selection effects therefore stack *against* us finding a positive impact of the VI on credit growth during the crisis. They also indicate that it is important to control for bank characteristics in order to minimise the risk of omitted-variables bias.

4. Empirical methodology

We start our empirical analysis by reporting a set of panel regressions for the period 1999-2009 to analyse whether foreign bank subsidiaries continued to be relatively stable providers of credit, as they had been during earlier local crises, or whether they were more fickle during the recent crisis. In each specification we include time-varying bank-ownership dummies – OWN_{ijt} – to distinguish between domestic private banks (the control group), state banks and foreign banks.[14]

In addition, we construct five time-invariant *Vienna* participation dummy variables.

- The first one, $VIENNA\ COUNTRY_j$ indicates whether a country was one of the five VI countries.
- Second, $VIENNA\ PARENT_{ij}$, specifies whether the parent bank of subsidiary *i* in country *j* signed one or more VI commitment letters (in country *j* or elsewhere).
- Third, $VIENNA\ LETTER_{ij}$ indicates whether the parent bank of subsidiary *i* in country *j* signed a VI commitment letter in country *j*.
- Fourth, $PARENT\ SIGNED\ ELSEWHERE_{ij}$ indicates whether the parent bank of subsidiary *i* in country *j* signed a VI commitment letter but not in country *j*.
- Fifth, $NON\text{-}VIENNA\ PARENT_{ij}$ indicates whether the parent bank of subsidiary *i* in country *j* did not sign any VI commitment letters.
- Finally, we also create $SUPPORT_{ij}$, a dummy variable that identifies whether the parent bank of subsidiary *i* in country *j* received some form of home-country government support.

Our priors about the impact of government support versus VI participation on credit growth differ. In the case of traditional government support, we expect a negative relationship to the extent that support came with "protectionist" strings attached. Only if government support had a strong positive impact on banks' financial positions, this may have outweighed the impact of a shift towards home-country lending. In the case of VI participation (and the related IFI support) we expect the impact to be positive as this intervention was explicitly targeted at maintaining exposures abroad. To the

[14] We also tried specifications where we split up foreign banks into de novo greenfield subsidiaries, established by the parent bank from scratch, and subsidiaries that are the result of a take-over. We did not find any significant differences in the lending behaviour of either type of bank and we therefore do not distinguish between them in our empirical analysis.

extent that we adequately control for confounding factors, we expect that banks that signed commitment letters in specific countries in return for financial support, were relatively stable credit sources compared with other foreign banks.

We create two crisis dummies – $CRISIS_t$ – that are "1" in either 2008 or 2009 and interact these with the ownership and *Vienna* variables to analyse whether, all else equal, banks with different ownership structures and VI participation status behaved differently during the crisis.

All panel regressions contain on the right-hand side a matrix of bank-specific, time-varying control variables – X_{ijt} – that measure financial characteristics of the banks as well as macroeconomic conditions in the host country. Because both government support and VI participation were not randomly allocated over the banking population, as discussed in the previous section, it is important to control for such bank characteristics. Our dataset allows us to do so, reducing concerns about omitted variable bias. Because government support and VI participation only partially overlapped, and because government support was mainly extended in 2008 and VI participation only in 2009, we can further disentangle the impact of these two types of government intervention.

To the extent that host country inflation increases the nominal value of loan portfolios there would be a positive effect of inflation on credit growth. However, as we convert our data to US dollars, inflationary effects should disappear to the extent that PPP holds. Since inflation differences are usually not immediately and fully offset by adjustments in the nominal exchange rate, we include the inflation rate as a regressor to ensure that we adequately correct for inflation-fuelled growth in nominal loan portfolios.[15]

Summarising, our baseline panel-regression specification looks as follows:

$$\Delta L_{ijt} = \alpha_1 + \gamma_1 Own_{ijt} + \gamma_2 Own_{ijt} \cdot Crisis_t + \gamma_3 Vienna_{ij} \cdot Crisis_t + \gamma_4 \cdot X_{ijt} + \mu_t + \eta_{ij} + \varepsilon_{ijt} \quad (1)$$

[15] If *within* a country, foreign and domestic banks denominate different proportions of their credit portfolio in foreign currency (FX) versus local currency, then this could confound our results. However, Brown and De Haas (2012), using data from the Banking Environment and Performance Survey (BEPS), show that the proportion of FX lending is in many cases not strongly correlated with ownership structure. For instance, in Bulgaria foreign (domestic) banks provided on average 35 (34) per cent of their 2004 lending in FX. In Latvia these numbers were 63 and 64 and in Estonia 52 and 77.

where:

- ΔL_{ijt} is the percentage gross credit growth of bank *i* in country *j* in year *t*
- α_1 is an intercept term and γ are coefficients or coefficient vectors
- OWN_{ijt} is a matrix of dummy variables that distinguish between domestic private banks (control group), state banks and foreign banks in country *j*
- $VIENNA_{ij}$ is a matrix of dummy variables that indicate banks' status as regards VI participation and government support
- $CRISIS_t$ is a dummy variable that identifies the 2008 or 2009 crisis year
- X_{ijt} is a matrix of host country macroeconomic variables, characteristics related to the parent bank of subsidiary banks *i*; as well as of characteristics of the bank *i* itself
- η_{ij} are bank fixed effects; μ_t year fixed effects, and ε_{ijt} is the idiosyncratic error, $\varepsilon_{ijt} \sim \text{IID}\left(0, \sigma_\varepsilon^2\right)$
- $i=1,..., N$ where N is the number of bank subsidiaries in the sample
- $j=1,..., N$ where N is the number of countries in the sample
- $t=1,..., T_i$ where T_i is the number of years in the sample for bank subsidiary *i*.

We estimate this specification using OLS with bank-specific fixed effects (Hausman tests indicate that the bank individual effects are significantly correlated with the explanatory variables) and robust estimators to correct for heteroscedasticity. We include year fixed effects to control for global trends that influenced all banks simultaneously.

Second, we run a set of cross-section regressions where the dependent variable is bank-specific credit growth in 2009 to analyse the impact of the Vienna Initiative in more detail. We now limit the sample to the five countries that participated in the VI and focus on foreign bank subsidiaries only. Since each of these countries contain several subsidiaries, we can include country fixed effects to rigorously control for credit demand at the country level.[16] This is important because the crisis hit the real economy of countries to a different extent and with a different lag. Firms' credit demand to finance working capital and investments was consequently affected to varying degrees. This allows us to examine, within the same country, how lending by

[16] Cetorelli and Goldberg (2011) follow a similar approach on the basis of country-level data on lending from 17 developed countries to 94 emerging markets.

banks that signed a commitment letter differed from banks that did not sign a letter. This cross-sectional specification looks as follows:

(2) $$\Delta L_{ij} = \alpha_1 + \gamma_1 \cdot \Delta L_{ij,2004-07} + \gamma_2 \cdot VI_{ij} + \gamma_3 \cdot X_{ij,2007} + \eta_j + \varepsilon_{ij}$$

where

- ΔL_{ij} is the percentage gross credit growth of bank *i* in country *j* in 2009
- α_1 is an intercept term and γ are coefficients or coefficient vectors
- $\Delta L_{ij,2005-07}$ is the average annual percentage gross credit growth of bank *i* in country *j* during the period 2005-07
- VI_{ij} is a dummy that indicates whether the parent bank of subsidiary *i* signed a commitment letter in country *j*
- X_{ijt} is a matrix of pre-crisis (2007) control variables for the (parent bank of) subsidiary *i*
- η_j are country fixed effects and ε_{ij} is the idiosyncratic error, $\varepsilon_{ij} \sim \text{IID}\left(0, \sigma_\varepsilon^2\right)$.

5. Empirical results

Table 2 shows panel regressions to analyse the relationship between bank ownership structure and credit growth before and during the crisis.[17] We explain about 30 per cent of the variation in banks' annual credit growth rates. The top panel shows that before the crisis, foreign banks grew significantly faster than domestic banks, exceeding their annual rate of growth by as much as 20 percentage points.

This holds even when controlling for a battery of other (lagged) bank characteristics. In line with our expectations, these controls show that large banks, banks with an already high loan-to-deposit ratio, and banks with high loan loss reserves (that is, worse loan quality) grew slower on average. More solvent, liquid and profitable banks expanded credit more quickly. As expected, credit growth was positively correlated with the business cycle – a proxy for credit demand at the host-country level.

During 2008, foreign banks were the first to sharply curb their credit growth (column 4) and this brought them back in line with the average growth rate of private domestic banks (column 1).[18] Domestic bank lending slowed mainly in 2009, when the temporary decoupling of emerging markets from economic trends in the developed world came to an end. Interestingly, while state banks also had to slow down credit in 2009 (column 3), this reversal was less sharp when compared with private banks (column 1). This may reflect that in some countries governments used state-owned banks to smooth aggregate lending when privately owned banks started to deleverage.

[17] Column (1b) replicates column (1a) while including year fixed effects.
[18] The sum of the coefficient for *Foreign bank* and *Crisis 2008*Foreign bank* is just above or below zero (depending on the inclusion of year fixed effects). Also note that unreported regressions indicate that government support did not have an independent effect on foreign bank lending (see also Tables 4 and 5).

Table 2 Bank ownership and credit growth during the 2008-09 crisis

	All banks		Private domestic	State	Foreign
	(1a)	(1b)	(2)	(3)	(4)
State bank	-0.104	-0.125*			
	(0.151)	(0.097)			
Foreign bank	0.201***	0.142***			
	(0.000)	(0.005)			
Crisis 2008	-0.013		-0.003	-0.021	-0.143***
	(0.635)		(0.916)	(0.742)	(0.000)
Crisis 2009	-0.191***		-0.184***	-0.186**	-0.146**
	(0.000)		(0.007)	(0.050)	(0.021)
Crisis 2008 * State	0.021	-0.037			
	(0.667)	(0.466)			
Crisis 2009 * State	0.126***	0.088**			
	(0.005)	(0.048)			
Crisis 2008 * Foreign	-0.137***	-0.167***			
	(0.000)	(0.000)			
Crisis 2009 * Foreign	0.026	-0.005			
	(0.426)	(0.864)			
GDP growth	1.764***	0.907***	1.717***	1.199**	1.913***
	(0.000)	(0.000)	(0.000)	(0.035)	(0.000)
Inflation	-0.752***	-0.043	-0.738***	-1.044	-0.574
	(0.000)	(0.816)	(0.002)	(0.182)	(0.201)
Profitability (lag)	0.002***	0.002***	0.004***	-0.005**	0.001
	(0.007)	(0.001)	(0.000)	(0.044)	(0.438)
Bank size (lag)	-0.067***	-0.360***	-0.057**	-0.008	-0.080***
	(0.000)	(0.000)	(0.017)	(0.896)	(0.002)
Net loans/deposit ratio	-0.002***	-0.002***	-0.002***	-0.002***	-0.001
	(0.000)	(0.000)	(0.000)	(0.003)	(0.318)
Equity/net loans (lag)	0.003***	0.003***	0.004***	0.003**	0.000
	(0.002)	(0.000)	(0.001)	(0.042)	(0.704)
Liquidity (lag)	0.003***	0.003***	0.003***	0.002	0.003***
	(0.000)	(0.000)	(0.000)	(0.132)	(0.000)
Loan loss reserves/gross loans (lag)	-0.011***	-0.007***	-0.009**	-0.012**	-0.010**
	(0.000)	(0.010)	(0.017)	(0.026)	(0.046)
Cost-to-income ratio (lag)	0.002***	0.002***	0.003***	-0.001	0.002**
	(0.000)	(0.000)	(0.001)	(0.603)	(0.022)
Net income to assets (lag)	0.003	-0.000	0.002	0.005	0.005
	(0.163)	(0.985)	(0.475)	(0.506)	(0.511)
Constant	1.005***	4.736***	0.859***	0.706	1.219***
	(0.000)	(0.000)	(0.005)	(0.447)	(0.002)
No. of observations	4,805	4,805	2,955	357	1,493
R-squared	0.315	0.414	0.350	0.228	0.283
No. of banks	1294	1294	932	94	344
Year FE	No	Yes	No	No	No
Bank FE	Yes	Yes	Yes	Yes	Yes

Note: This table shows panel regressions to estimate the impact of bank ownership on credit growth before and during the crisis. The dependent variable is yearly credit growth (%). The sample period is 1999-2009. All independent variables are defined in Table A1. Crisis 2008 (2009) is a year dummy which is '1' in 2008 (2009). Robust p-values appear in brackets and ***, **, * correspond to the 1, 5 and 10 percent level of significance, respectively. Source: BankScope, IMF IFS, authors' calculations.

Next, in Table 3 we start to investigate whether the Vienna Initiative had a stabilising effect on foreign bank lending during the crisis. Using the same panel data as in Table 2, we explore how lending during the crisis differed between banks and countries inside and outside the Vienna Initiative. To keep the table concise, we only report the interaction terms between the crisis years and the VI variables. However, all specifications include the separate components of these interaction terms, time-varying bank controls (the same as in Table 2), as well as bank and year fixed effects. In the last three columns we also include parent-bank characteristics as controls. The first (last) three columns shows regression estimates based on the whole sample (foreign-bank sample).

The interaction term between *Crisis 2008* and *VI country* shows that in 2008, before the VI was initiated, bank lending dropped significantly more in (future) VI countries compared with non-VI countries. On average, the adjustment in credit growth was about 14 percentage points sharper in the five countries that would need to be supported by the IMF and EU later on. A similar interaction term for 2009 shows how a year later – when the credit crunch intensified on average – VI countries had "normalised" and the credit decline had become more in line with other countries in the region. We now no longer observe significant differences between VI and non-VI countries in terms of average lending contractions. It appears that the stabilisation efforts by the IMF and IFIs in 2009, in response to the particularly weak performance of these countries in 2008, at least ensured that credit dynamics were brought in line with those observed elsewhere in emerging Europe.

We can now also interact both crisis dummies with *Vienna parent* to check whether VI banks behaved differently during the crisis, both before (2008) and during the VI (2009). We find that this was indeed the case. Column 1 shows that compared with all other banks, banks that would end up signing VI commitment letters in 2009 saw a relatively sharp decline in credit growth in 2008 (an additional 9 percentage points). This links back to our earlier observation that VI participants were the banks that had been growing the fastest before the crisis (and were larger as a result) but were also less well capitalised and had a weaker loan portfolio.

Table 3 The Vienna Initiative and credit growth

	All banks			Foreign banks		
	(1)	(2a)	(2b)	(3)	(4a)	(4b)
Vienna country*2008	-0.145***	-0.132***		-0.132***	-0.117	
	(0.000)	(0.004)		(0.010)	(0.109)	
Vienna country*2009	-0.012	0.025		-0.095*	-0.048	
	(0.771)	(0.598)		(0.083)	(0.553)	
Vienna parent*2008	-0.088**			-0.008		
	(0.012)			(0.891)		
Vienna parent*2009	0.052*			0.102*		
	(0.009)			(0.055)		
Vienna letter*2008		-0.106	-0.231***		-0.030	-0.125*
		(0.134)	(0.000)		(0.727)	(0.083)
Vienna letter*2009		-0.048	-0.022		0.036	-0.002
		-0.501	(0.698)		(0.715)	(0.980)
Parent signed elsewhere*2008		-0.119***	-0.125***		-0.003	0.005
		(0.002)	(0.001)		(0.956)	(0.932)
Parent signed elsewhere*2009		0.067*	0.069**		0.115**	0.119**
		(0.052)	(0.047)		(0.036)	(0.030)
Non-Vienna parent*2008		-0.121***	-0.134***			
		(0.009)	(0.003)			
Non-Vienna parent*2009		-0.005	-0.002			
		(0.890)	(0.963)			
State*2008	-0.007	-0.030	-0.039			
	(0.891)	(0.545)	(0.437)			
State*2009	0.092**	0.087*	0.087*			
	(0.042)	(0.059)	(0.061)			
No. observations	4,805	4,805	4,805	1,287	1,287	1,287
No. banks	1,294	1,294	1,294	292	292	292
R-squared	0.596	0.597	0.596	0.595	0.595	0.595
Bank controls	Yes	Yes	Yes	Yes	Yes	Yes
Parent controls	No	No	No	Yes	Yes	Yes
Macroeconomic controls	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Bank FE	Yes	Yes	Yes	Yes	Yes	Yes

Note: This table shows panel regressions to estimate the impact of the Vienna Initiative ('VI') on credit growth. The dependent variable is yearly credit growth (%). The sample period is 1999-2009. All independent variables are defined in Table A1. Crisis 2008 (2009) is a year dummy which is '1' in 2008 (2009). All regressions include GDP growth, inflation, and the same bank-specific control variables as in Table 2 as (unreported) time-varying control variables. The constant is not shown. Robust p-values appear in brackets and ***, **, * correspond to the 1, 5 and 10 percent level of significance, respectively. Source: BankScope, IMF IFS, authors' calculations.

Interestingly, however, in 2009 these banks had stabilised and there is even statistically weak evidence that they now decelerated less when compared with domestic banks and non-VI foreign banks (column 1). To look into this in more detail, column 3 compares VI foreign banks with non-VI foreign banks while leaving out all observations on domestic banks. The picture is similar: compared with non-VI foreign

banks, credit growth of foreign banks that were part of the VI was about 10 percentage points higher (all else equal).

In columns 2a,b and 4a,b we use the same bank samples but distinguish more finely between different types of VI participation. Because *Vienna country* is highly correlated with *Vienna letter*, we show both a specification that includes interaction terms with *Vienna country* (columns 2a and 4a) and one without those terms (columns 2b and 4b). The results indicate that in countries where parent banks eventually signed a commitment letter, foreign bank subsidiaries did worse in 2008. The drop in their credit growth was more than 20 percentage points larger compared with all other banks (column 2b) and about 13 percentage points when compared with other foreign banks (column 4b). However, this was no longer the case in 2009, which confirms our earlier results.

Moreover, columns 2 and 4 indicate that when a parent bank did not sign a commitment letter in a particular country *but did do so in another country*, we do not find any negative impact on lending in the non-signing country in 2009. It is therefore unlikely that VI banks propped up their lending in VI countries, as per the signed commitment letters, by reducing their lending elsewhere in emerging Europe. If anything, we find a *positive* spillover effect: lending by foreign bank subsidiaries whose parent banks signed commitment letters in one or more *other* countries, was relatively stable. Their credit growth in 2009, compared with the pre-crisis period, exceeds that of all other banks by 7 percentage points (columns 2a,b) and that of other foreign banks by more than 12 percentage points (columns 4a,b).

Finally, the results at the bottom of columns 2a,b suggest that also subsidiaries of parent banks that were not part of the VI in any country, did no worse in 2009 when compared with domestic banks. This confirms the general picture that emerged from Table 2: overall foreign banks had to curb their lending somewhat earlier (in 2008), but displayed about the same lending behaviour in 2009. Also note that, in line with Table 2, state banks were a relatively stable source of credit during 2009.

Table 4 provides a number of robustness tests on column 3 of Table 3, which we reproduce in column 1 here. In the second column we only include banks for which we have at least seven years of subsequent observations to make sure our results are

not driven by banks with just a few data points. Our results on the stabilising effect of Vienna participation and of state ownership in 2009 continue to hold.

Table 4 Robustness tests

	Base	7+ years	PCSE	GMM	HTaylor	Loan growth	Asset growth	Support
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Vienna letter*2008	-0.231***	-0.038	-0.308***	-0.344***	-0.291***	-0.235***	-0.191***	-0.215***
	(0.000)	(0.509)	(0.000)	(0.000)	(0.000)	(0.000)	(0.002)	(0.001)
Vienna letter*2009	-0.022	-0.051	-0.068	-0.074	-0.049	-0.033	0.031	-0.000
	(0.698)	(0.374)	(0.344)	(0.285)	(0.513)	(0.573)	(0.596)	(0.998)
Parent signed elsewhere*2008	-0.125***	0.050	-0.119***	-0.115***	-0.088*	-0.121***	-0.184***	-0.108**
	(0.001)	(0.254)	(0.004)	(0.009)	(0.066)	(0.002)	(0.000)	(0.026)
Parent signed elsewhere*2009	0.069**	0.073**	0.081*	0.096**	0.112**	0.068*	-0.001	0.089*
	(0.047)	(0.050)	(0.053)	(0.033)	(0.024)	(0.062)	(0.969)	(0.065)
Non-Vienna parent*2008	-0.134***	0.032	-0.099**	-0.118**	-0.134***	-0.137***	-0.160***	-0.128***
	(0.003)	(0.572)	(0.044)	(0.016)	(0.003)	(0.003)	(0.000)	(0.008)
Non-Vienna parent*2009	-0.002	0.015	-0.014	-0.012	0.005	-0.004	0.047	0.006
	(0.963)	(0.719)	(0.770)	(0.789)	(0.909)	(0.922)	(0.178)	(0.887)
State*2008	-0.039	0.080	0.034	-0.007	0.038	-0.035	-0.048	-0.039
	(0.437)	(0.223)	(0.509)	(0.901)	(0.511)	(0.504)	(0.402)	(0.436)
State*2009	0.087*	0.125**	0.129**	0.109**	0.144**	0.095**	0.112**	0.086*
	(0.061)	(0.020)	(0.018)	(0.033)	(0.012)	(0.048)	(0.026)	(0.062)
Support 2008/2009								-0.025
								(0.542)
No. observations	4,805	2,571	4,805	4,805	4,805	4,805	4,805	4,805
No. banks	1,294	346	1,294	1,294	1,294	1,294	1,294	1,294
R-squared	0.596	0.475	0.281	-	-	0.597	0.608	0.596
Bank controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Parent controls	No	No	No	No	No	No	No	No
Macroeconomic controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	No	No	No	Yes	Yes	Yes
Bank FE	Yes	Yes	No	No	No	Yes	Yes	Yes
Country FE	No	No	Yes	Yes	Yes	No	No	No

Note: This table shows robustness tests of column (3) in Table 3 (here repeated in column 1). Column (2) shows a specification which only includes observations where we observe at least seven years of data for a bank. Column (3) shows a specification with panel-corrected standard errors which combine bank-level heteroscedasticity with an AR(1) process. Column (4) shows a specification using the Arellano-Bond GMM estimator. Column (5) shows a specification using the Hausman and Taylor (1981) estimator. Column (6) shows a regression where the dependent variables is net instead of gross loan growth. Column (7) shows a regression where the dependent variable is growth of total assets. Column (8) includes a dummy that is "1" in case a bank received government support in 2008 or 2009. All independent variables are defined in Table A1. Crisis 2008 (2009) is a year dummy which is '1' in 2008 (2009). All regressions include GDP growth, inflation, and the same bank-specific control variables as in Table 2 as (unreported) time-varying control variables. Country dummy variables and the constant are not shown. Robust p-values appear in brackets and ***, **, * correspond to the 1, 5 and 10 percent level of significance, respectively. Source: BankScope, IMF IFS, and authors' calculations.

In the next column we report estimates with panel-corrected standard errors (PCSE, cf. Beck and Katz, 1995) which allows us to correct for bank-level heteroscedasticity and an AR(1) process in the error structure. Again, our results do not change

materially. In columns 4 and 5 we show the same specification using a Arellano-Bond (1991) GMM estimator and a Hausman and Taylor (1981) instrumental variable estimator, respectively. Here our results hold as well.

In columns 6 and 7 we replace gross loan growth with net loan growth (that is, we adjust for provisioning) and growth in total assets, respectively. In the first case our results continue to hold. In the second case we find that the positive effect of a parent bank that signed in another country disappears. This may indicate that the Vienna Initiative – and in particular the Joint IFI Action Plan that supported banks' ability to continue lending to firms and households – may have pushed participating banks to continue lending while taking compensating measures to shorten their balance sheet in other ways. Finally, column 8 includes a government support dummy. Our results continue to hold although the state support dummy itself is highly insignificant.

Next, Table 5 reports cross-sectional regressions for 2009 on a sample of foreign bank subsidiaries in the five VI countries Bosnia and Herzegovina, Hungary, Latvia, Romania and Serbia. We include host-country fixed effects to control for local demand conditions. This allows us to compare, within the same host country, subsidiaries of banks that signed a commitment letter in that country with those that did not (while controlling for parent bank and subsidiary covariates). Columns 1-3 (4-6) show regressions with credit (asset) growth on the left-hand side.

We find among foreign banks in VI countries a clear positive relationship between signing commitment letters on total credit and asset growth in 2009. As in the panel regressions, we do not find a separate impact of government support on credit and asset growth. In contrast, even when we control for various parent bank and subsidiary characteristics, including average pre-crisis growth rates, we continue to find a strong and substantial effect of parent banks' commitment letters on subsidiary lending. Finally, the control variables show that, as expected, bank lending was lower for large subsidiaries, subsidiaries with weaker balance sheets (as indicated by higher proportions of loan loss reserves), and subsidiaries that grew faster before the outbreak of the crisis.

Table 5 The Vienna Initiative, commitment letters and bank lending in 2009

	Credit growth			Asset growth		
	(1)	(2)	(3)	(4)	(5)	(6)
Vienna letter	0.053	0.149**	0.180**	0.116**	0.122*	0.149**
	(0.259)	(0.038)	(0.016)	(0.011)	(0.061)	(0.030)
Support		-0.138	-0.140		-0.066	-0.067
		(0.194)	(0.185)		(0.262)	(0.240)
Pre-crisis average annual credit (asset) growth		0.179***	0.145***		0.133**	0.104*
		(0.000)	(0.005)		(0.010)	(0.093)
Bank size (lag)		-0.101***	-0.119***		-0.043	-0.058*
		(0.000)	(0.000)		(0.161)	(0.087)
Loan loss reserves/gross loans (lag)		-0.012	-0.013		-0.011**	-0.012**
		(0.273)	(0.245)		(0.036)	(0.023)
Size parent bank (lag)			0.013**			0.011
			(0.017)			(0.159)
No. of observations	54	54	54	54	54	54
R-squared	0.17	0.43	0.46	0.36	0.49	0.52
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Bank FE	No	No	No	No	No	No
Bank controls	No	Yes	Yes	No	Yes	Yes
Parent FE	No	No	No	No	No	No
Parent controls	No	No	Yes	No	No	Yes

Note: This table shows cross-sectional regressions to estimate the impact of signing VI commitment letters on credit growth. The dependent variables are annual credit and annual assets growth in 2009 (%). All independent variables are defined in Table A1. All regressions include country fixed effects to control for credit demand. The sample includes foreign bank subsidiaries in the five VI countries Bosnia & Herzegovina, Hungary, Latvia, Romania, and Serbia. Robust p-values appear in brackets and ***, **, * correspond to the 1, 5 and 10 percent level of significance, respectively. Source: BankScope, IMF IFS, authors' calculations.

6. Conclusion

We use a comprehensive dataset with detailed information on 1,294 banks in emerging Europe to analyse the determinants of credit growth during the 2008-09 crisis. We focus on the impact of bank ownership structure and access to government support, either through capital injections by home-country authorities or through participation in the Vienna Initiative.

We find that foreign bank subsidiaries reduced their lending somewhat earlier, in 2008, and this brought their pace of lending back in line with that of their domestic peers. While we find no significant impact of home-country government support on foreign bank lending, we do show that foreign banks that took part in the Vienna Initiative appear to be more stable lenders than banks that did not participate. In particular, cross-sectional regressions for the crisis year 2009 indicate that subsidiaries of parent banks that signed commitment letters where significantly more stable sources of credit than subsidiaries of banks that did not sign such letters *in the same country*. We find no evidence of VI banks withdrawing from non-VI countries in order to maintain exposures to countries where they signed commitment letters. If anything, participation in the VI had positive rather than negative spillover effects to the rest of emerging Europe. Finally, we show how by the second year of the crisis, state-owned domestic banks had become a relatively stable credit source.

In all, we conclude that the Vienna Initiative, an ad hoc coordination mechanism, was a relatively successful example of catalytic funding where public funds provided by the IMF, EU and various development institutions were complemented by a coordinated (but non-coercive) bail-in of private-sector lenders. This not only helped countries to close their external funding gaps at the macroeconomic level but also, as we show in this paper, to soften the inevitable deleveraging process in emerging Europe and to prevent a uncoordinated "rush to the exit".

During earlier crises that originated in emerging Europe itself, parent banks proved to be a source of strength and their subsidiaries actively stabilised local lending. In this paper, we show that during the recent crisis, when parent banks were hit by severe funding shocks at home, foreign bank subsidiaries had to rein in credit growth relatively fast when compared with their high pre-crisis growth rates (bringing credit

dynamics in line with those of domestic banks). Because subsidiaries are financially integrated into a group structure, their lending reacts to developments in other parts of the group and when parent banks are hit by a funding shock, this may translate into a reduction in lending by their foreign subsidiaries. One implication of these intra-bank financial linkages is that (national) supervisory authorities need to coordinate their policies and supervisory activities across borders. Coordination mechanisms that were set-up before the crisis have proven insufficient and ineffective in the strongly integrated banking markets of emerging Europe. This resulted in the need to set up an ad hoc coordination mechanism during the crisis, the Vienna Initiative.

Unfortunately, regulatory reform and cooperation in the wake of the 2008-09 crisis has only proceed very slowly. As a result, when in 2011 Western European banks experienced significant funding constraints and were once more under pressure to deleverage, and even to sell local subsidiaries, the need was felt for a "Vienna 2.0". While this new effort will focus again on the short-term task of preventing an uncoordinated and excessive decline in bank lending in the region, the focus will also be on moving the cross-border banking model of emerging Europe in the direction of a new banking model that relies more on local sources of funding.

Better coordination, cooperation and information-exchange between supervisors are not only necessary to prevent spillovers of financial shocks, but also because the alternative – forcing highly integrated pan-European banking groups to hold more capital and liquidity in each individual subsidiary– may be costly. "Ring-fenced" subsidiaries are first of all costly to the bank groups themselves, because the sum of ring-fenced pools of capital will be larger than the current group capital as banks can no longer exploit the benefits of international diversification.[19] At the macroeconomic level, there may be costs involved too because ring-fenced subsidiaries would impede the efficient functioning of banks' internal capital markets. The ability of multinational banks to raise funding where it is cheapest and allocate it to the most worthy investment projects contributes to a more efficient international allocation of capital.

Ideally, one would like to move towards an integrated supervisory regime that would allow banks to set up multinational networks of branches and subsidiaries through

[19] See Cerutti et al. (2010) for an analysis of the costs for European multinational banks in case of (partial) ring-fencing of their subsidiaries in emerging Europe.

which capital and liquidity can be allocated to its most productive use. At the same time, supervisors should be able to adequately respond to local shocks that hit a banking group and that may have knock-on effects to other parts of the group. At a minimum, such supervisory "integration" could take the form of more harmonisation and a strengthening of the colleges of supervisors on multinational banks, as well as setting up (ex ante and binding) burden-sharing agreements (see for instance Goodhart and Schoenmaker, 2009). A more efficient and effective resolution of cross-border banks in trouble could be tackled by a resolution fund at the EU level or a network of national resolution funds. The most far-reaching solution would entail the creation of a pan-European supervisor for large groups. This could be supplemented by adequate capital and liquidity regulation as well as host-country macroprudential supervision able to curb externally funded credit booms.

Whatever policy option will be chosen, forced "subsidiarisation" through ring-fencing – basically cutting up multinational banks into strings or independent "local" banks – may be a second-best option that reflects the inability of national supervisors to reach a satisfactory level of cross-border cooperation and burden sharing. Having said that, in particular in emerging Europe many foreign bank subsidiaries will gradually need to move towards a funding policy that relies more on local bank funding and less on parent-bank funding. This requires the development of local capital markets, which will allow banks to "top up" domestic deposit funding with local wholesale funding if and when required.

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Annex

Table A1 Variable descriptions

Variable name	Periodicity	Description	Source
		Bank-level data (# banks = 1,294)	
Private domestic bank	1999-2009	1= bank is privately domestically owned	BankScope, websites
State bank	1999-2009	1= bank is >30 per cent owned by the state	BankScope, websites
Support	2008-2009	1= bank received government support (asset sale, capital injection, and/or guarant	Websites
Vienna parent	2009	1= subsidiary is owned by a parent bank that signed up to the Vienna Initiative	EBRD
Non-Vienna parent	2009	1= subsidiary is owned by a parent bank that did not sign up to the Vienna Initiativ	EBRD
Vienna country	2009	1= subsidiary is based in a country part of the Vienna Initiative	EBRD
Vienna letter	2009	1= parent bank signed a commitment letter in the subsidiary's host country	EBRD
Parent signed elsewhere	2009	1 = parent bank signed a commitment letter in another but not in the subsidiary's (	EBRD
Pre-crisis IFI client	2009	1 = subsidiary was a client of the EBRD, IFC, or EIB before 2008	EBRD
Regional exposure	2007	Number of subsidiaries that a foreign bank owns in Emerging Europe	BankScope
Crisis 08 (09)	2008-2009	1= bank observation in the year 2008 (2009)	-
Credit growth	1999-2009	Annual percentage growth in gross loans (= net loans plus loan loss reserves)	BankScope
Asset growth	1999-2009	Annual percentage growth in total assets	BankScope
Deposit growth	1999-2009	Annual percentage growth in deposits	BankScope
Profitability	1999-2009	Return on average equity (in %)	BankScope
Bank size	1999-2009	Log total assets in thousands of US$	BankScope
Loan/deposit ratio	1999-2009	Net loans/short term funding (in %)	BankScope
Tier 1	1999-2009	Tier 1 capital ratio	BankScope
Solvency	1999-2009	Equity/net loans (in %)	BankScope
Liquidity	1999-2009	Liquid Assets / Dep & ST Funding (in %)	BankScope
Net interest margin	1999-2009	Net interest income / Earning assets(in %)	BankScope
Efficiency	1999-2009	Cost/income ratio (in %)	BankScope
Loan quality	1999-2009	Loan loss reserves/gross loans (in %)	BankScope
		Country-level data (# countries = 30)	
GDP per capita	1999-2009	Lagged log GDP per capita, PPP (constant 2005 international US$)	IFS
GDP growth	1999-2009	Real GDP growth (in %)	IFS
GDP volatility	1999-2009	Deviation of GDP growth from its period average (in %)	IFS, authors' calculation
Inflation	1999-2009	Change in CPI inflation, end of period (in %)	IFS
Inflation volatility	1999-2009	Deviation of inflation from its period average (in %)	IFS, authors' calculation
Exchange rate change	1999-2009	Change in local curreny unit/USD period average (in %)	IFS
Exchange rate volatility	1999-2009	Deviation of exchange rate annual change from its period average (in %)	IFS, authors' calculation

This table presents definitions and sources of all variables used in our empirical analysis. BankScope is Bureau van Dijk's BankScope database. IFS .are the International Financial Statistics provided by the International Monetary Fund

Table A2 Descriptive statistics

Panel A. Bank-level variables (1999-2009)

	Full sample summary statistics					Means by bank-ownership			
	Average no. banks per year	Mean	Std. Dev.	Min	Max	Foreign Vienna	Foreign non-	Private domestic	State
Private domestic	411	0.63	0.5	0	1	n.a.	n.a.	n.a.	n.a.
State bank	50	0.08	0.3	0	1	n.a.	n.a.	n.a.	n.a.
Support	647	0.04	0.2	0	1	0.1	0.0	n.a.	n.a.
Credit growth	647	40.10	48.8	-66	249	40.9	43.2	39.6	36.6
Profitability	647	11.3	13.0	-72	67	11.1	8.5	11.9	11.2
Bank size	647	12.5	1.8	9	19	14.2	12.8	12.0	13.4
Loan/deposit ratio	647	91.4	50.6	8	399	78.2	82.6	96.2	93.3
Solvency	647	34.0	30.4	0	294	21.6	37.8	35.5	38.7
Liquidity	647	45.9	27.5	3	247	35.9	44.8	48.0	50.4
Efficiency	647	66.9	22.2	4	196	63.6	70.3	67.1	66.2
Loan quality	647	5.7	5.6	0	48	4.5	4.4	6.2	6.8

Panel B. Country-level variables (1999-2009)

	Obs	Mean	Std. Dev.	Min	Max
GDP growth	6479	4.2	6.0	-18.0	30.5
Inflation	6479	10.2	10.1	-8.5	293.7

Note: This table provides summary statistics for all the bank-level and country-level variables. Table A1 provides variable definitions and sources. Panel A contains summary statistics for the full sample as well as conditional means for sub-samples by bank ownership. Panel B contains summary statistics for the country-level variables. Source: BankScope and IMF IFS.

Table A3 Pairwise correlations

Panel A. Bank-level variables

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
[1]	Private domestic	1.00										
[2]	State	-0.38	1.00									
[3]	Credit growth	-0.01	-0.02	1.00								
[4]	Profitability	0.07	0.00	0.13	1.00							
[5]	Bank size	-0.39	0.14	-0.02	0.11	1.00						
[6]	Loan/deposit ratio	0.12	0.01	0.01	-0.03	-0.15	1.00					
[7]	Solvency	0.06	0.04	-0.11	-0.11	-0.33	-0.06	1.00				
[8]	Liquidity	0.10	0.05	-0.05	-0.01	-0.32	0.01	0.55	1.00			
[9]	Loan quality	0.11	0.06	-0.23	-0.17	-0.10	-0.03	0.25	0.12	1.00		
[10]	Efficiency	0.01	-0.01	-0.13	-0.47	-0.22	0.01	0.01	0.09	-0.02	1.00	
[11]	Profitability	0.22	-0.04	-0.15	0.02	-0.23	0.25	0.10	0.11	0.25	0.28	1.00

Panel B. Country-level variables

		[1]	[2]	[3]	[4]	[5]
[1]	GDP per capita	1.00				
[2]	GDP growth	-0.22	1.00			
[3]	Inflation	-0.10	-0.02	1.00		
[4]	Inflation volatility	-0.31	0.12	0.02	1.00	
[5]	Exchange rate change	-0.08	-0.42	0.46	0.06	1.00

Note: This table provides pairwise correlations for our bank-level and country-level variables. Tables A1 and A2 provide variable definitions and sources. Source: BankScope and IMF IFS.

Table A4 Overview of government support to parent banks and participation in the Vienna Initiative

	BOSNIA-HERZEGOVINA	Support	HUNGARY	Support	LATVIA	Support	ROMANIA	Support	SERBIA	Support
	Bank name		Bank name		Bank name		Bank name		Bank name	
Parent participates in VI	Raiffeisen Bank	Y	UniCredit Bank	Y	DnB Nord Bank	N	Alpha Bank Romania	Y	Société Générale Bank Serbia	Y
	Intesa SanPaolo Bank	Y	Raiffeisen Bank	Y	SEB Bank	N	Banc Post	Y	UniCredit Bank	Y
	UniCredit Bank	Y	Erste Bank Hungary	Y	Swedbank	N	Banca Romaneasca	Y	Piraeus Bank Beograd	Y
	HypoAlpe-Adria-Bank	Y	K&H Bank	Y			Piraeus Bank Romania	Y	Eurobank EFG	Y
	ZepterKomercBank BanjaLuka	Y	CIB Bank	Y			Volksbank Romania	Y	Volksbank Serbia	Y
	Volksbank BH	Y	Magyar Takarekszövetkezeti Ba	Y			Banca Comerciala Romana	Y	Alpha Bank Serbia	Y
	NLB Bank	N					UniCredit Tiriac Bank	Y	Vojvodjanska Bank	Y
							BRD - Groupe Societe Generale	Y	Banca Intesa	Y
							Raiffeisen Bank	Y	HypoAple-Adria Bank	Y
									Raiffeisen Bank	Y
Parent does not participate in VI	Turkish Ziraat Bank Bosnia	N	KDB Bank	N	HVB Bank Latvia	Y	Egnatia Bank	N	NLB Bank	N
	ProCredit Bank	N	Volksbank	Y			ProCredit Bank	N	ProCredit Bank	N
	Bosna Bank International	N	Commerzbank	Y			ABN Amro Bank	Y	Erste Bank	Y
			Banco Popolare	Y			OTP Bank	N	OTP Bank	N
			Deutsche Bank	N			San Paolo IMI Bank	Y	Marfin Bank	N
			Fundamenta-Lakaskassza	N			Banca de Creditsi Dezvoltare Romexter	N	Moskovska Bank	N
			Allianz Bank	N			Emporiki Bank	N	Credit Agricole	Y
			Budapest Hitel-ésFejleszési Bank	Y					Findomestic Bank	Y
									KBC Bank	Y

Note: This table provides information on the presence of VI support and/or government support for the parent banks of subsidiaries in countries that were part of the Vienna Initiative. Source: EBRD and banks' websites. "Y" ("N") indicate that the subsidiary's parent bank received (did not receive) government support in 2008-09. Source: EBRD, banks' websites.

Table A5 Banks participating in the Vienna Initiative and horizontal meetings

VI country	Commitment letter	Parent banks	Subsidiaries	Participation September 2009 Brussels	Participation March 2010 Athens
Hungary	Signed May 20, 2009	Bayerische Landesbank	MKB Bank	x	x
	http://www.imf.org/external/np/cm/2009/052009.htm	Erste Group	Erste Bank Hungary	x	x
		Intesa SanPaolo	CIB Bank	x	x
		KBC Group	K&H Bank	x	x
		Raiffeisen International	Raiffeisen Bank	x	x
		UniCredit Group	UniCredit Bank Hungary	x	x
Romania	Signed March 26, 2009	Erste Group	Banca Comercială Română	x	x
	Reaffirmed November 18, 2009	Raiffeisen International	Raiffeisen Bank	x	x
	http://www.imf.org/external/np/cm/2009/032609.htm	Eurobank EFG	Banc Post	x	x
		National Bank of Greece	Banca Romaneasca	x	x
		UniCredit Group	UniCredit Tiriac Bank	x	x
		Société Générale	BRD	x	x
		Alpha Bank	Alpha Bank Romania	x	x
		Volksbank International	Volksbank Romania	x	x
		Piraeus Bank	Piraeus Bank Romania	x	x
Bosnia and Herzegovina	Signed June 22, 2009	Raiffeisen International	Raiffeisen Bank	x	x
	http://www.imf.org/external/np/cm/2009/062209.htm	Hypo Alpe-Adria	Hypo Alpe-Adria Bank	x	x
		UniCredit Group	UniCredit Bank	x	x
		Volksbank International	Volksbank Bosnia	x	x
		Intesa SanPaolo	Intesa Sanpaolo Bank	x	x
		NLB Group	NLB Bank		
Serbia	Signed March 27 2009	Eurobank EFG	Eurobank EFG	x	x
	Reaffirmed Feb 26 2010	Intesa SanPaolo	Bank Intesa	x	x
	http://www.imf.org/external/np/cm/2009/032709.htm	Raiffeisen International	Raiffeisen Bank	x	x
		Hypo Alpe-Adria	Hypo Alpe-Adria Bank		x
		National Bank of Greece	Vojvodjanska Bank	x	x
		UniCredit Group	UniCredit Bank Serbia	x	x
		Société Générale	Société Générale Bank	x	x
		Alpha Bank	Alpha Bank Beograd	x	x
		Volksbank International	Volksbank Beograd	x	x
		Piraeus Bank	Piraeus Bank Beograd	x	x
Latvia	Signed September 11, 2009	Bank DnB NORD	AS DnB NORD Bank	x	x
	http://www.imf.org/external/np/country/2009/091409.l	Nordea Bank	Nordea branch	x	x
		Swedbank	Swedbank, Latvia	x	x
		SEB	SEB Bank Latvia		x
Other banks		ING Bank			x
		OTP Bank			x

Note: This table lists all banks that participated in the horizontal meetings of the Vienna Initative. Source: commitment letters and concluding statements with the IMF and European Commission.

Table A6 Selection into the Vienna Initiative

	Vienna letter	Vienna parent	Vienna parent
	(1)	(2)	(3)
Credit growth 2004-07	-0.022	-0.003	0.801
	(0.362)	(0.907)	(0.473)
GDP growth country *j*	-3.271	-8.175**	
	(0.264)	(0.014)	
Inflation country *j*	-3.668	-8.872**	
	(0.248)	(0.019)	
Profitability subsidiary	0.009	0.012	
	(0.242)	(0.126)	
Size subsidiary	0.218**	0.446***	
	(0.032)	(0.000)	
Loan/deposit ratio subsidiary	0.001	0.002	
	(0.690)	(0.249)	
Loan quality subsidiary	0.082**	0.088**	
	(0.030)	(0.026)	
Profitability parent bank	-0.061	0.141	-0.100
	(0.620)	(0.322)	(0.703)
Size parent bank	0.051	0.245**	0.076
	(0.543)	(0.024)	(0.607)
Loan/deposit ratio parent bank	0.005	0.008*	0.006
	(0.151)	(0.052)	(0.357)
Tier 1 capital ratio parent	-0.000*	-0.000***	-0.000*
	(0.063)	(0.000)	(0.060)
Loan quality parent bank	-0.162	-0.127	-0.471*
	(0.185)	(0.278)	(0.055)
Pre-crisis IFI client	0.462*	-0.185	0.434
	(0.074)	(0.583)	(0.573)
Regional exposure	0.066*	0.347***	0.672***
	(0.055)	(0.000)	(0.001)
Constant	-6.090***	-13.232***	-3.814
	(0.002)	(0.000)	(0.174)
No. of observations	235	235	66

Note: This table shows probit regressions to estimate the likelihood of participation in the Vienna Initiative. Column (1) estimates, at the subsidiary level, the probability that the parent bank of subsidiary *i* signed a commitment letter in country *j*. Column (2) estimates, at the subsidiary level, the probability that the parent bank of subsidiary *i* signed a commitment letter in at least one VI country. Column (3) estimates, at the parent-bank level, the probability that a parent bank signed a commitment letter in at least one VI country. All independent variables are defined in Table A1. Robust p-values appear in brackets and ***, **, * correspond to the 1, 5 and 10 percent level of significance, respectively. Source: BankScope, IMF IFS, EBRD, bank websites, authors' calculations.

Table A7: A timeline of the Vienna Initiative

26 October 2008 – IMF approves US$ 16.5 billion standby agreement for Ukraine.

6 November 2008 – IMF approves €12.3 billion standby arrangement for Hungary.

27 November 2008 – Six bank groups (Raiffeisen, Erste, Intesa SP, Société Générale, KBC and Unicredit) write a letter to the European Commission on financial stability concerns in emerging Europe and urge action by host governments. The EBRD (copied on the letter), EIB and IFC start to put together a joint action plan, which culminates in a joint declaration on 27 February 2009 (see below).

17 December 2008 – The six multinational bank groups meet in Vienna to discuss next steps by the industry. The EBRD and EIB are invited.

23 December 2008 – IMF announces €1.7 billion standby agreement for Latvia, coordinated with the European Commission.

16 January 2009 – IMF approves €402.5 million standby arrangement for Serbia.

23 January 2009 – First "Vienna Initiative" meeting at the Austrian Ministry of Finance. It is agreed that the IMF will develop principles of burden sharing between home and host-country authorities and banks.

End-January and early February 2009 – Country meetings for coordinated action in Ukraine and Romania, bringing together the key subsidiaries of bank groups with the IMF and other IFIs and, in Ukraine, the government.

27 February 2009 – The heads of the EBRD, EIB, and the World Bank Group launch, as part of the VI framework, the Joint IFI Action Plan, offering up to €24.5 billion of support to systemic banks in the region and lending to the real economy.

17 March 2009 – Second VI meeting. The IMF presents a distribution of burden sharing rules between home and host country authorities, which is broadly agreed on and would be used during the crisis. Host country responsibilities: prudent macroeconomic policies, support of deposit insurance schemes, and the supply of local currency liquidity irrespective of bank ownership. Parent banks and home country responsibilities: rollover/maintain exposures to the extent possible, recapitalise subsidiaries following stress tests; home county national bank support packages can be used for supporting subsidiaries.

15 March-15 June 2009 – Under the Joint IFI Action Plan the EBRD, EIB and World Bank Group meet jointly with all 17 main multinational bank groups to assess their needs.

26-27 March 2009 – First set of parent bank commitment letters signed for Romania and Serbia, at the Joint Vienna Institute, Vienna.

25 April 2009 – Meeting of IFIs and home and host governments during the IMF-World Bank Spring meetings, Washington DC, to take stock and agree on next steps under the VI.

4 May 2009 – the IMF approves €12.9 billion standby arrangement for Romania as part of a €20 billion package of balance of payments support approved by the European Commission.

7 May 2009 –the EBRD makes investments worth over €400 million to UniCredit subsidiaries across eight Emerging European countries.

15 May 2009 – Joint IFI Action Plan: Meeting of key parent banks, home and host governments and IFIs during the EBRD Annual Meetings, London.

20 May 2009 – Commitment letter signed for Hungary and Romania in Brussels.

22 June 2009 – Commitment letter signed for Bosnia and Herzegovina in Vienna.

8 July 2009 –IMF €1.52 billion standby agreement for Bosnia and Herzegovina.

10 July 2009 – the EBRD sets up a €220 million financing facility to the Hungarian subsidiaries of OTP Bank and €100 million to Erste Bank.

29 July 2009 – **the** EBRD announces investment of €400 million in the subsidiaries of Société Générale.

14 September 2009 – Parent bank commitment letter signed for Latvia in Stockholm.

23 September 2009 – EBRD approves a €150 million financing package to Raiffeisen Bank subsidiaries in Ukraine, Romania and Russia.

24 September 2009 – First "horizontal" full-forum meeting of the Vienna Initiative in Brussels. Discussion of deleveraging and recapitalisation needs – first signal of moving out of the systemic risk phase. Participants: 17 parent bank groups, their home and host supervisors and fiscal authorities, IMF, European Commission, EBRD, EIB, World Bank, European Central Bank, Committee of European Banking Supervisors (CEBS).

5 October 2009 – Meeting with CEOs of parent bank groups, home and host governments and heads of IFIs at the IMF-World Bank Annual Meetings, Istanbul. Joint Progress Report issued by the Joint IFI Action Plan participants (EBRD, EIB and World Bank).

18-19 November 2009 – Follow-up meetings with parent banks for Romania and Hungary in Brussels. Start of discussions with banks on addressing the vulnerability of foreign exchange (FX) exposures.

18 January 2010 – Coordination meeting with the IMF, World Bank, EIB and European Commission in Vienna. Shift from crisis management to addressing the region's vulnerabilities (lack of local capital markets, FX exposures) and the legacy of the crisis (balance sheet clean-up, distressed asset management).

25 February 2010 – EBRD provides a €100 million financing package to Intesa Sanpaolo subsidiaries in Bosnia and Herzegovina, Serbia and Hungary.

26 February 2010 – Follow-up meetings on Serbia (exposure commitments relaxed due to good macroeconomic adjustment and recovery) and Bosnia and Herzegovina in Vienna.

18-19March 2010 – Second **"**horizontal" full-forum VI meeting in Athens. Agreement were signed to set up working groups on local currency market development and on the absorption of EU funds. Participants: 20 bank groups, their home and host supervisors and fiscal authorities, IMF, EC, EBRD, EIB, World Banks, European Central Bank and CEBS.

4 May, 8 July and 10 November 2010 – Meetings of the working group on local currency development under the Vienna Initiative at the EBRD in London.

9 May 2010 – IMF approves €30 billion standby arrangement for Greece.

17 June 2010 – Information session and meeting on the absorption of EU funds in Sofia.

22 July 2010 – Follow-up Vienna parent bank meeting on Romania and Hungary.

26 July-4 August 2010 – Joint European Commission-IMF-World Bank mission to Romania to discuss measures to accelerate the absorption of EU structural funds.

4 October 2010 – EBRD extends just under €1 billion of financing to subsidiaries of Piraeus Bank, National Bank of Greece, Alpha Bank and EFG Eurobank.

6 October 2010 – Progress Report on implementation of the Joint IFI Action Plan.

End-2010 – Expiry of the Vienna Initiative Joint IFI Action Plan.

March 2011 – Final Report on implementation of the Joint IFI Action Plan.

17-18 March 2011 – Third horizontal full forum meeting under the VI in Brussels to evaluate and consider recommendations of the two working groups.

17 March 2011 – Follow-up meetings in Brussels with parent banks on Romania.