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Abstract

We use data on 1,294 banks in Central and Eastern Europe to analyze how bank ownership and creditor coordination in the form of 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 Central and Eastern Europe. We show that 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.

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I. INTRODUCTION

The start of the transition process in 1989 heralded the large-scale entry of foreign banks into Central and Eastern Europe and, to a lesser extent, Central Asia (henceforth: ECA region). 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; Havrylchuk 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 the ECA region. Although few of these large banks had direct U.S. 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. The ECA region itself had also become vulnerable to external shocks as domestic imbalances and vulnerabilities, in the form of credit and domestic demand booms, had been building up for several years.

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 the region. 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 percent 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 the ECA region. Although most banks confirmed their commitment 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, 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 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 exposures to the ECA region started to engage in informal discussions towards the end of 2008. The goal of this ‘Vienna Initiative’ (VI)² was to avoid collective action problems (Pistor, 2011) and to guarantee macroeconomic stability in Central and Eastern 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 mobilize resources from these institutions to support bank lending in the region. This support was integrated with the IMF and European Union macro-financial support programs to Bosnia and Herzegovina, Hungary, Latvia, Serbia, and Romania that were also part of the VI.

In return for countries’ commitment to keep their programs on track and for financial support under the Joint IFI Action Plan, a number of multinational banks signed country-specific commitment and comfort letters in which they pledged to maintain cross-border exposures and to continue to provide credit to firms and households. To do so, banks confirmed that they would keep subsidiaries adequately capitalized 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 EU (a ‘bail-out’) with funding by development institutions and a coordinated ‘bail in’ of private lenders.

Although a large-scale, uncoordinated withdrawal of banks from the ECA region did not materialize—and the VI can therefore be considered successful *stricto sensu*—as yet virtually no empirical analysis has been undertaken to assess its impact.³ No evidence is

² See Levinger (2010) and Nitsche (2010) for more detailed overviews of the VI and the appendix to this paper for a timeline.

³ 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 VI countries.

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 in countries where they signed commitment letters and countries where they did not. It also remains unclear whether signing commitment letters 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 can also inform current policy initiatives against the background of the European sovereign debt crisis and its negative effect on international bank lending. When exposures to sovereign risk in the Eurozone periphery brought about a deleveraging process as of summer 2011, coordination between home and host-country bank supervisors had to be stepped up once more. As part of ‘Vienna 2.0’ principles to avoid disorderly deleveraging in Central and Eastern Europe were agreed by officials and private-sector banks in Brussels in March 2012. The agreement aims to achieve better coordination between banking-sector regulation and supervision and to contain negative spillovers between the Eurozone and emerging Europe. With Vienna 2.0 in place it has become even more important to have a better understanding of the effectiveness of the original Vienna Initiative.

II. MAIN FINDINGS

Our empirical results indicate that both foreign and private domestic banks sharply curbed credit growth during the crisis. State-owned domestic banks were relatively stable lenders as were banks that took part in the VI. 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.⁴ Finally, we find no evidence to indicate that home-country government support made foreign banks retrench more from the ECA region.

These results contribute to three strands of the literature. First, we shed light on the implications of foreign bank entry for financial stability. Morgan, Rime 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 Central and Eastern Europe that during past bouts of financial turmoil lending by

⁴ Note that the VI was meant to solve an inter-bank coordination problem and that the overarching goal was to ensure that a critical number of banks would stay engaged in the ECA region, thus taking away the incentive for other banks to rush for the exit. This systemic set up stacks against finding differences between the lending behavior of banks that participated in the VI and those that did not.

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 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) analyzes 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 recent studies 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 than domestic banks. Domestic banks, which relied more on deposits to fund credit growth, were better positioned to continue to lend. In line with this, Popov and Udell (2012) show how foreign 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 wholesale-funded domestic banks cut credit more during the crisis. Yet, Barba Navaretti, Calzolari, Pozzolo, and Levi (2010) stress that multinational banks were a stabilizing 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 took place in 2009. Our paper provides further evidence on how multinational banks can transmit home-country shocks across borders. We are the first to show, however, how such transmission can be partially alleviated by international policy and creditor coordination.

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 nationalized in their home country. Brei, Gambacorta, and Von Peter (2011) provide evidence that suggests that recapitalizations 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. Main (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. We find that in particular during the second year of the crisis state-owned banks developed into somewhat more stable credit sources compared to private banks. Moreover, and in contrast to Rose and Wieladek (2011), we

find no negative impact of state support on lending by Western European bank subsidiaries in the ECA region. This may be a sign of the relatively strong commitment of these banks to this particular region, which many banks consider to be a ‘second home market’. Alternatively, this finding may reflect the positive impact of statements by the European Commission to the effect that banks benefiting from state support would not be expected to reduce their presence in Central and Eastern Europe.

Third, our results provide evidence on the possible catalytic effect of crisis funding by an international lender of last resort like the IMF. Our paper contributes to this literature by analyzing 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 analyze how banks’ roll-over commitments ultimately influenced their lending across various VI and non-VI countries.

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 materializes if an IMF program 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) analyze 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 Vienna Initiative—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 organized a concerted private sector involvement to resolve collective action problems.⁵

⁵ In 1998, Brazil initially limited its role to collecting data on rollover rates and sharing these with the IMF without actively encouraging banks to maintain their cross-border lending. This soft monitoring without ‘bite’ did not succeed in stemming a sharp reduction in international bank exposure to Brazil. A similarly soft monitoring arrangement in Turkey in 2002 was a paper tiger too (Roubini and Setser, 2004, p.150).

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

III. THE VIENNA INITIATIVE

In the fall of 2008 fears were growing about the vulnerability of the ECA region to withdrawals by multinational banks. Rapid credit growth during the pre-crisis period 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 also have led to severe macroeconomic destabilization.

In November 2008, a number of pan-European banks sent a letter to the European Commission, copying the EBRD and EIB, to call for a quick and coordinated response to the problems in the region and, more specifically, to ensure sufficient funding for banks operating in this region. In response the VI was inaugurated on January 23rd 2009 in Austria as a coordination platform for multinational banks, their home and host country supervisors, fiscal authorities, the IMF, and development institutions. The goal was to safeguard a continued commitment of parent banks to their subsidiaries.⁶

The VI consisted of two main parts. In the first part, the European Bank Coordination Initiative (EBCI) secured private sector involvement for five countries with IMF-EU programs: Bosnia and Herzegovina, Hungary, Latvia, Romania, and Serbia. In these countries substantial amounts of foreign currency debt were maturing and external financing gaps were opening up. Part of this debt was issued by multinational banks and insufficient roll-overs would have compromised the success of the IMF-EU balance of payments stabilization programs. 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.

A total of 17 parent banks pledged, via so-called commitment or comfort letters, to maintain their exposures and to recapitalize subsidiaries for the duration of the IMF-EU programs.⁷ Importantly, the banks that signed differed by country as did the exact nature

⁶ Impromptu coordination was necessary since burden sharing in the case of a failing European cross-border bank depends on ex post negotiations between countries. Such improvised cooperation (Freixas, 2003) or ex post bargaining is prone to coordination failures.

⁷ Commitment letters were signed for Romania and Serbia in March 2009, Hungary in May 2009, and Bosnia and Herzegovina in June 2009. In the case of Latvia, parent banks issued a concluding statement on September 11, 2009 in which they committed to maintain their overall exposure subject to nominal GDP development and the availability of sound business opportunities. This was followed by a press release on September 14. While bilateral commitment letters were therefore never signed, banks did sign 'comfort (continued...)

of the commitments. For instance, in the case of Hungary, banks promised to ensure a “prudent capitalization of their subsidiaries” and to maintain at least 95 percent 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 program. Also, in Bosnia and Herzegovina and in Serbia banks committed to rollover 100 percent of their exposure (as of December 2008) and to recapitalize subsidiaries if and when needed. Some of these commitments were reaffirmed later on in 2009.⁸ As the crisis subsided, the pressure to maintain cross-border exposures was reduced and in some cases roll-over commitments were lowered by early 2010.

The first arm of the VI also included ‘Full Forum Meetings’: a platform for policy discussions with representatives across the region and their western counterparts. In addition, the European Commission ensured that banks benefiting from state support would not be forced to downsize their presence in the ECA region. In March 2009, an Emergency Summit of the EU leaders confirmed that bank support packages at the national level should not lead to any restrictions on banks’ eastern European subsidiaries.

The second main part of the VI was launched on February 27, 2009 when the EBRD, EIB, and the World Bank Group announced a ‘*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*”.⁹ During spring 2009, these institutions met several times with 17 banking groups that covered over 60 percent 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 EUR 24.5 billion to support large cross-border banks. By end-September 2009, banks had received EUR 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.¹⁰ The Joint IFI Action Plan was closely linked to the European Bank

letters’ in January 2009 and February 2010 in which they committed to comply with all regulatory requirements. Belarus and the Ukraine had an IMF program but no commitment letters were signed.

⁸ 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).

⁹ See <http://www.ebrd.com/pages/news/press/2009/090227.shtml> for details.

¹⁰ Progress Report 2009 (p. 4) and Final Report 2011 (p. 5). By end-December 2010, EUR 33.2 billion had been made available.

Coordination Initiative, the first VI arm, as bank's commitments were conditional on IMF-EU programs being in place.

At the time concerns were expressed that the focus of the commitment letters on five core countries could tempt multinational banks to withdraw funds from countries without exposure commitments (such as Poland and the Czech Republic). Such 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 agreements that extended the informal commitments of EBRD-supported banks to Central and Eastern Europe as a whole. Moreover, in September 2009 and March 2010 'horizontal meetings' were held with various multinational banking groups and the relevant national and international authorities (see Table 10 at the end of the paper). The focus of these meetings was on lending to the region as a whole rather than the five program countries with explicit exposure commitments.

IV. DATA AND DESCRIPTIVE STATISTICS

Our main data consists of balance sheet and income statement data for 1,294 banks in the ECA region during 1999–2009.¹¹ The source is Bureau van Dijk's BankScope database and all data are denominated in US dollars to ensure comparability across banks.¹² 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 Commission¹³ and the IMF, Reuters news service, and bank websites. We capture support in the form of capital injections, bank-specific guarantees, and asset sales to the government. For each bank we also analyze whether one or several of the three main development institutions operating in CEE and Central Asia—the EBRD, World

¹¹ Our definition of the ECA region comprises Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Georgia, Hungary, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, FYR of Macedonia, Moldova, Mongolia, Montenegro, Poland, Romania, Russia, Serbia, Slovak Republic, Slovenia, Tajikistan, Turkey, Turkmenistan, Ukraine, and Uzbekistan.

¹² When we denominate our dependent and independent variables in euro for those countries where euroisation is important our results stay virtually the same. See Table 5 for a robustness test to this effect.

¹³ 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.

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 websites 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 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.¹⁴ 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 one percent observations with the highest loan growth.

The development of credit growth across shows that after abundant annual growth during 1999–2007 (of on average 50 percent) lending slowed markedly in 2008 and further in 2009 (Table 1 and Figure 1). 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 had to cut credit growth significantly. In SEE, foreign banks reduced credit growth relatively fast in 2008 when compared to their very high pre-crisis rates of expansion. In absolute terms, credit growth of domestic and foreign banks in Central and Eastern Europe & the Baltic States (CEB) and SEE converged in 2008 and 2009.

¹⁴ Our results continue to hold when we use net loans as our dependent variable (see Table 5).

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.¹⁵

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 the ECA region before the crisis (this difference is statistically significant at the 1 percent level). During the crisis, both types of foreign banks slowed down their lending and in 2009 credit even contracted for VI banks in CEB.

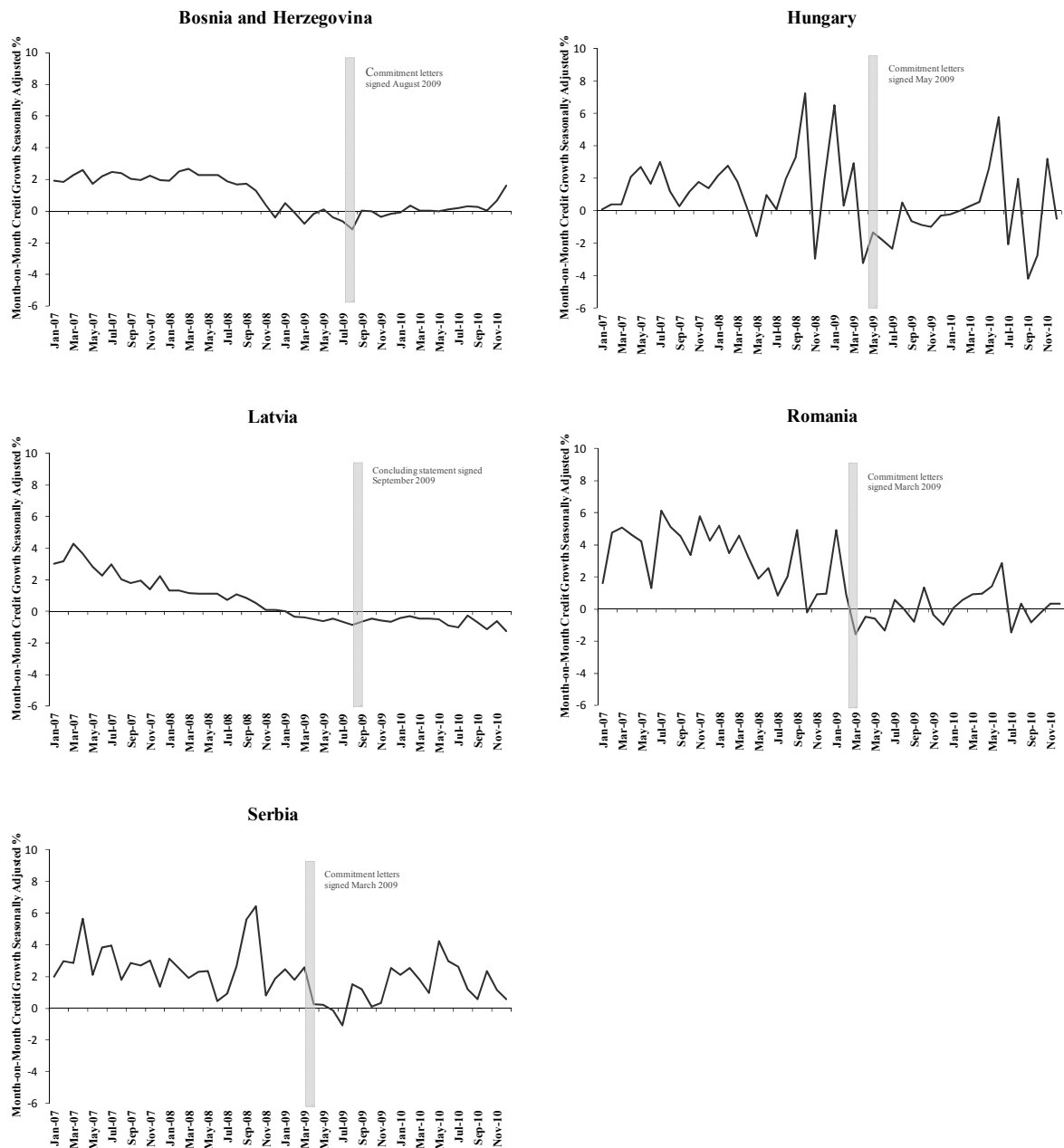
In sum, Table 1 indicates that in CEB and SEE foreign banks grew faster than domestic banks before the crisis. During the crisis, both types of banks displayed low but similar growth rates, implying that foreign banks decelerated more. Further east, foreign and domestic banks had been growing at similar rates before the crisis, but domestic banks had to cut lending more once the crisis struck. Tables 6–8 at the end of the paper provide variable definitions, descriptive statistics, and a correlation matrix. 29 percent of the banks in our sample are foreign owned, 63 percent domestic private banks, and 8 percent state-owned banks. About 4 percent 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 percent. 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 percent) and higher among state banks (6.8).

Tables 9 and 10 at the end of the paper 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 tables also show variation among foreign bank 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

¹⁵ For instance, VTB—Russia's second largest (and state-owned) bank—grew by 53 percent in 2009 while Gazprombank, another large Russian state bank, increased credit by 38 percent. In south-eastern Europe, Bulgarian Municipal Bank grew by 13 percent and Slovenian Banka Celje by 11 percent during 2009.

Herzegovina but not in Serbia. These are the sources of between-bank and within-bank variation that we exploit in this paper.

Figure 1. Credit Growth before and during the Vienna Initiative



Source: National authorities via CEIC data service.

Table 1. Credit Growth across the ECA Region¹⁶

Region	Bank ownership	No. bank-year obs.	No. banks	Average annual credit growth		
				1999-2009 (1)	2009 (2)	1999-2007 (3)
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
	<i>Vienna</i>	74	8	0.45	0.13	-0.05
	<i>Non-Vienna</i>	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
	- <i>Vienna</i>	165	24	0.78	0.20	0.06
	- <i>Non-Vienna</i>	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

Source: Bankscope database.

The decision of a parent bank to participate in the VI and to sign commitment letters in specific countries was not random. Table 11 provides a probit analysis to analyze 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 the ECA region)—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.

¹⁶ 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 VI. CEB is Central Europe and the Baltic States. SEE is south-eastern Europe. CIS is the Commonwealth of Independent States.

These results indicate that while VI banks were on average larger, they were also less well capitalized, 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 minimize the risk of omitted-variables bias.

V. EMPIRICAL METHODOLOGY

We start our empirical analysis to analyze the impact of the Vienna Initiative by estimating a set of cross-section regressions where the dependent variable is bank-specific credit growth in 2009. For now, we 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.¹⁷ 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 compare, within the same country, how lending by banks that signed a commitment letter differed from banks that did not sign a letter. This cross-sectional specification looks as follows:

$$(1) \quad \Delta L_{ij} = \alpha_1 + \gamma_1 \cdot \Delta L_{ij,2004-07} + \gamma_2 \cdot VI_{ij} + \gamma_3 \cdot X_{ij,2007} + \eta_j + \varepsilon_{ij}$$

where

- ΔL_{ij} is the percentage gross credit (or asset) 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, $\varepsilon_{ij} \sim \text{IID}(0, \sigma_\varepsilon^2)$.

¹⁷ 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.

Next, we report a set of panel regressions for the period 1999–2009 to analyze 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 when compared to domestic banks. 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.¹⁸

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 or not. 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, $NON-VIENNA\ PARENT_{ij}$ 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 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 to 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 analyze 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

¹⁸ 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 both types of banks and we therefore do not distinguish between them in our empirical analysis.

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. As 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.¹⁹

Summarizing, our panel-regression specification looks as follows:

$$(2) \quad \Delta L_{ijt} = \alpha_1 + \gamma_1 Own_{ijt} + \gamma_2 Own_{ijt} \cdot Crisis_t + \gamma_3 Vienna_{ij} \cdot Crisis_t + \gamma_4 \cdot X_{ijt} + \mu_t + \eta_{ij} + \varepsilon_{ijt}$$

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;

¹⁹ 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) percent of their 2004 lending in FX. In Latvia these numbers were 63 and 64 and in Estonia 52 and 77.

- η_y are bank fixed effects; μ_t year fixed effects, and ε_{ijt} is the idiosyncratic error, $\varepsilon_{ijt} \sim \text{IID}(0, \sigma_\varepsilon^2)$;
- $i=1, \dots, N$ where N is the number of bank subsidiaries in the sample;
- $j=1, \dots, N$ where N is the number of countries in the sample;
- $t=1, \dots, T_i$ 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.

VI. EMPIRICAL RESULTS

Table 2 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 versus those that did not (whilst controlling for parent bank and subsidiary covariates). Columns 1–3 show regressions with credit growth on the left-hand side and columns 4–6 with asset growth.

We find among foreign banks in VI countries a clear positive relationship between signing commitment letters on total credit and asset growth in 2009. When we control for various parent bank and subsidiary characteristics, including average pre-crisis growth rates, we find a strong and substantial effect of parent banks' commitment letters on subsidiary lending. In addition, we find in the cross-section that subsidiaries of parent banks that received some form of government support grew faster in 2009 compared to non-supported banks. This goes against the idea that home-country state support came with protectionist strings attached. In contrast, supported banks may have felt less need to deleverage abroad.

Finally, the control variables show that, as expected, credit and asset growth were slower 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 2. The Vienna Initiative, commitment letters, and bank lending in 2009²⁰

	Credit growth			Asset growth		
	(1)	(2)	(3)	(4)	(5)	(6)
Vienna letter	0.022 (0.661)	0.156* (0.059)	0.166** (0.050)	0.122*** (0.006)	0.200*** (0.001)	0.237*** (0.000)
Support		0.152*** (0.009)	0.148** (0.013)		0.117*** (0.009)	0.071 (0.112)
Pre-crisis average annual credit (asset) growth		-0.232** (0.028)	-0.217** (0.047)		-0.168** (0.019)	-0.171** (0.015)
Bank size (lag)		-0.119*** (0.001)	-0.132*** (0.001)		-0.096*** (0.002)	-0.124*** (0.000)
Loan loss reserves/gross loans (lag)		-0.017 (0.138)	-0.016 (0.154)		-0.011** (0.044)	-0.011* (0.050)
Profitability (lag)		0.003 (0.125)	0.003 (0.124)		0.002 (0.147)	0.002 (0.177)
Loan/deposit ratio (lag)		-0.001 (0.159)	-0.001 (0.123)		-0.000 (0.736)	-0.000 (0.584)
Equity/net loans (lag)		0.001 (0.319)	0.000 (0.481)		-0.001** (0.025)	-0.002*** (0.000)
Liquid assets/customer funding (lag)		-0.003* (0.054)	-0.003* (0.086)		-0.002* (0.082)	-0.001 (0.401)
Income to assets (lag)		-0.025* (0.098)	-0.023 (0.126)		-0.013* (0.091)	-0.014* (0.061)
Size parent bank (lag)			0.003 (0.563)			0.019*** (0.000)
Loan/deposit ratio parent bank (lag)			0.001 (0.104)			0.000 (0.883)
No. of observations	54	54	54	54	54	54
R-squared	0.12	0.51	0.53	0.36	0.66	0.72
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

Source: Authors' estimates.

²⁰ 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 asset growth in 2009 (percent). All independent variables are defined in Table 6. 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 one, five and ten percent level of significance, respectively.

Next, we employ panel regressions to analyze the relationship between bank-ownership structure and credit growth both before and during the crisis (Table 3).²¹ We explain about 30 percent 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 (i.e., 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, Table 3) and this brought them back in line with the average growth rate of private domestic banks (column 1).²² 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 to 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. In column 4 we find, in line with the cross-sectional results in Table 2, a positive coefficient for the government support dummy, although here it is imprecisely estimated. Note that the cross-sectional results were based on a narrower sample of only those foreign banks in the five VI countries.

²¹ Column (1b) replicates column (1a) while including year fixed effects.

²² 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).

Table 3. Bank ownership and credit growth during the 2008-09 crisis²³

	All banks		Private domestic	State	Foreign
	(1a)	(1b)	(2)	(3)	(4)
State bank	-0.103 (0.151)	-0.123* (0.093)			
Foreign bank	0.201*** (0.000)	0.142*** (0.005)			
Crisis 2008	-0.013 (0.635)		-0.003 (0.916)	-0.021 (0.742)	-0.143*** (0.000)
Crisis 2009	-0.191*** (0.000)		-0.184*** (0.007)	-0.186** (0.050)	-0.146** (0.021)
Crisis 2008 * State	0.023 (0.667)	-0.035 (0.466)			
Crisis 2009 * State	0.125*** (0.005)	0.088** (0.047)			
Crisis 2008 * Foreign	-0.137*** (0.000)	-0.167*** (0.000)			
Crisis 2009 * Foreign	0.023 (0.426)	-0.005 (0.864)			
Government support during crisis	0.044 (0.276)	-0.015 (0.687)			0.057 (0.173)
GDP growth	1.764*** (0.000)	0.907*** (0.000)	1.717*** (0.000)	1.199** (0.035)	1.923*** (0.000)
Inflation	-0.752*** (0.000)	-0.043 (0.816)	-0.738*** (0.002)	-1.044 (0.182)	-0.574 (0.201)
Profitability (lag)	0.002*** (0.007)	0.002*** (0.001)	0.004*** (0.000)	-0.005** (0.044)	0.001 (0.438)
Bank size (lag)	-0.067*** (0.000)	-0.360*** (0.000)	-0.053** (0.017)	-0.008 (0.896)	-0.080*** (0.002)
Net loans/deposit ratio	-0.002*** (0.000)	-0.002*** (0.000)	-0.002*** (0.000)	-0.002*** (0.003)	-0.001 (0.318)
Equity/net loans (lag)	0.004*** (0.002)	0.003*** (0.000)	0.004*** (0.001)	0.003** (0.042)	0.000 (0.704)
Liquidity (lag)	0.003*** (0.000)	0.003*** (0.000)	0.003*** (0.000)	0.002 (0.132)	0.003*** (0.000)
Loan loss reserves/gross loans (lag)	-0.011*** (0.000)	-0.007*** (0.010)	-0.009** (0.017)	-0.012** (0.026)	-0.010** (0.046)
Cost-to-income ratio (lag)	0.002*** (0.000)	0.002*** (0.000)	0.003*** (0.001)	-0.001 (0.603)	0.002** (0.022)
Net income to assets (lag)	0.003 (0.163)	-0.000 (0.985)	0.002 (0.475)	0.005 (0.506)	0.005 (0.511)
Constant	1.005*** (0.000)	4.736*** (0.000)	0.859*** (0.005)	0.706 (0.447)	1.219*** (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

Source: Authors' estimates.

²³ 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 (percent). The sample period is 1999-2009. All independent variables are defined in Table 6. Crisis 2008 (2009) is a year dummy which is '1' in 2008 (2009). Robust p-values appear in brackets and ***, **, * correspond to the one, five and ten percent level of significance, respectively.

Next, in Table 4 we return to the question of whether the Vienna Initiative had a stabilizing impact on bank lending. Using the same panel data as in Table 3 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 3), and 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 to 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 ‘normalized’ 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 stabilization 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 became in line with those elsewhere in the ECA region.

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 to all other banks, banks that signed VI commitment letters in 2009 decelerated less when compared to 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 to non-VI foreign banks, credit growth of foreign banks that were part of the VI was about 11 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 22 percentage points larger compared to all other banks (column 2b) and about 19 percentage points when compared to other foreign banks (column 4b). However, this was no longer the case in 2009, which confirms our earlier results.

Table 4. The Vienna Initiative and credit growth²⁴

	All banks			Foreign banks		
	(1)	(2a)	(2b)	(3)	(4a)	(4b)
Vienna country*2008	-0.147*** (0.000)	-0.133*** (0.004)		-0.135*** (0.009)	-0.119 (0.105)	
Vienna country*2009	-0.012 (0.761)	0.023 (0.633)		-0.095* (0.081)	-0.050 (0.538)	
Vienna parent*2008	-0.055 (0.189)			-0.001 (0.985)		
Vienna parent*2009	0.091** (0.037)			0.110** (0.049)		
Vienna letter*2008		-0.089 (0.241)	-0.216*** (0.001)		-0.025 (0.775)	-0.186*** (0.003)
Vienna letter*2009		-0.024 (0.756)	-0.003 (0.965)		0.042 (0.669)	0.011 (0.865)
Parent signed elsewhere*2008		-0.101** (0.039)	-0.109** (0.025)		0.003 (0.966)	-0.069 (0.125)
Parent signed elsewhere*2009		0.087* (0.067)	0.087* (0.067)		0.122** (0.032)	0.108** (0.014)
Non-Vienna parent*2008		-0.114** (0.019)	-0.128*** (0.008)			
Non-Vienna parent*2009		0.003 (0.947)	0.005 (0.895)			
State*2008	-0.010 (0.837)	-0.031 (0.543)	-0.040 (0.435)			
State*2009	0.088* (0.053)	0.087* (0.060)	0.086* (0.063)			
Government support during crisis	-0.054 (0.168)	-0.026 (0.526)	-0.018 (0.697)	-0.020 (0.671)	-0.023 (0.580)	-0.012 (0.787)
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

Source: Authors' estimates.

²⁴ This table shows panel regressions to estimate the impact of the Vienna Initiative ('VI') on credit growth. The dependent variable is yearly credit growth (percent). The sample period is 1999-2009. All independent variables are defined in Table 6. 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 3 as (unreported) time-varying control variables. The constant is not shown. Robust p-values appear in brackets and ***, **, * correspond to the one, five and ten percent level of significance, respectively.

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 the ECA region. 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 to the pre-crisis period, exceeds that of all other banks by 9 percentage points (columns 2a,b) and that of other foreign banks by about 11 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 not do worse in 2009 when compared to domestic banks. This confirms the general picture that emerged from Table 3: overall foreign banks had to curb their lending somewhat earlier, already in 2008, but displayed about the same lending behavior in 2009. Also note that, in line with Table 3, state banks were a relatively stable source of credit during 2009.

Table 5 provides a number of robustness tests on column 2b of Table 4. In column 1 we denominate our variables in euros instead of USD for those countries where euroisation is widespread. Our results remain virtually unchanged. 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 stabilizing effect of Vienna participation and of state ownership in 2009 continue to hold. 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 column 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.

Table 5. Robustness tests²⁵

	Euro	7+ years	PCSE	GMM	HTaylor	Loan growth	Asset growth
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Vienna letter*2008	-0.250*** (0.000)	-0.038 (0.509)	-0.308*** (0.000)	-0.344*** (0.000)	-0.291*** (0.000)	-0.235*** (0.000)	-0.191*** (0.002)
Vienna letter*2009	-0.021 (0.739)	-0.051 (0.374)	-0.068 (0.344)	-0.074 (0.285)	-0.049 (0.513)	-0.033 (0.573)	0.031 (0.596)
Parent signed elsewhere*2008	-0.136*** (0.006)	0.050 (0.254)	-0.119*** (0.004)	-0.115*** (0.009)	-0.088* (0.066)	-0.121*** (0.002)	-0.184*** (0.000)
Parent signed elsewhere*2009	0.078* (0.095)	0.073** (0.050)	0.081* (0.053)	0.096** (0.033)	0.112** (0.024)	0.068* (0.062)	-0.001 (0.969)
Non-Vienna parent*2008	-0.141*** (0.004)	0.032 (0.572)	-0.099** (0.044)	-0.118** (0.016)	-0.134*** (0.003)	-0.137*** (0.003)	-0.160*** (0.000)
Non-Vienna parent*2009	0.002 (0.961)	0.015 (0.719)	-0.014 (0.770)	-0.012 (0.789)	0.005 (0.909)	-0.004 (0.922)	0.047 (0.178)
State*2008	-0.038 (0.454)	0.080 (0.223)	0.034 (0.509)	-0.007 (0.901)	0.038 (0.511)	-0.035 (0.504)	-0.048 (0.402)
State*2009	0.091** (0.048)	0.125** (0.020)	0.129** (0.018)	0.109** (0.033)	0.144** (0.012)	0.095** (0.048)	0.112** (0.026)
No. observations	4,805	2,571	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
R-squared	0.588	0.475	0.281	-	-	0.597	0.608
Bank controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Parent controls	No	No	No	No	No	No	No
Macroeconomic controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	No	No	No	Yes	Yes
Bank FE	Yes	Yes	No	No	No	Yes	Yes
Country FE	No	No	Yes	Yes	Yes	No	No

Source: Authors' estimates.

²⁵ This table shows robustness tests of column (2b) in Table 4. Column (1) shows a specification where all variables are expressed in euros instead of USD for those countries where euroisation is widespread. 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 variable is net instead of gross loan growth. Column (7) shows a regression where the dependent variable is growth of total assets. All independent variables are defined in Table 6. 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 3 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 one, five and ten percent level of significance, respectively.

In column 6 and 7 we replace gross loan growth with net loan growth (i.e. 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.

VII. CONCLUSIONS

We use a comprehensive dataset with detailed information on 1,294 banks in the ECA region to analyze 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, already in 2008, and this brought their pace of lending back in line with that of their domestic peers. We 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 were 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 the region. We also find no evidence to suggest that home-country government support made foreign banks retrench more from the ECA region. 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 that were “victim” of negative externalities stemming from home countries of foreign banks 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 the ECA region and to prevent a uncoordinated ‘rush to the exit’. Even with effective cross-border supervision, such negative externalities would have been inevitable, as they are related to fast liquidity movements across borders within the same bank group.

During earlier crises that originated in the ECA region itself, parent banks proved to be a source of strength and their subsidiaries actively stabilized 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 to 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.

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.

The Vienna 2.0 Initiative focuses more on better coordination, cooperation, and information-exchange between supervisors that is 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.²⁶ 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.

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.

²⁶ 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.

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 Central and Eastern Europe many foreign bank subsidiaries will gradually need to move towards a funding policy that relies more on local 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.

Table 6. Variable descriptions

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.

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 guarantee)	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 Initiative	EBRD
Vienna country	2009	1= subsidiary is based in a country part of the Vienna Initiative	EBRD
Vienna letter Parent signed elsewhere	2009	1= parent bank signed a commitment letter in the subsidiary's host country	EBRD
Pre-crisis IFI client	2009	1 = parent bank signed a commitment letter in another but not in the subsidiary's country	EBRD
Regional exposure	2007	Number of subsidiaries that a foreign bank owns in the ECA region	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 percent)	BankScope
Bank size	1999-2009	Log total assets in thousands of US\$	BankScope
Loan/deposit ratio	1999-2009	Net loans/short term funding (in percent)	BankScope
Tier 1	1999-2009	Tier 1 capital ratio	BankScope
Solvency	1999-2009	Equity/net loans (in percent)	BankScope
Liquidity	1999-2009	Liquid Assets / Dep & ST Funding (in percent)	BankScope
Net interest margin	1999-2009	Net interest income / Earning assets (in percent)	BankScope
Efficiency	1999-2009	Cost/income ratio (in percent)	BankScope
Loan quality	1999-2009	Loan loss reserves/gross loans (in percent)	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 percent)	IFS
GDP volatility	1999-2009	Deviation of GDP growth from its period average (in percent)	IFS, authors' calculations
Inflation	1999-2009	Change in CPI inflation, end of period (in percent)	IFS
Inflation volatility	1999-2009	Deviation of inflation from its period average (in percent)	IFS, authors' calculations
Exchange rate change	1999-2009	Change in local currency unit/USD period average (in percent)	IFS
Exchange rate volatility	1999-2009	Deviation of exchange rate annual change from its period average (in percent)	IFS, authors' calculations

Source: Bank Scope Database.

Table 7. Descriptive statistics

This table provides summary statistics for all the bank-level and country-level variables. Table 6 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.

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-Vienna	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

Table 8. Pairwise correlations

This table provides pairwise correlations for our bank-level and country-level variables. Tables 6 and 7 provide variable definitions and sources.

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

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Table 9. Overview of government support to parent banks and participation in the Vienna Initiative

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.

	BOSNIA-HERZEGOVINA		HUNGARY		LATVIA		ROMANIA		SERBIA	
	Bank name	Support	Bank name	Support	Bank name	Support	Bank name	Support	Bank name	Support
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
	Volksbank BH	Y	CIB Bank	Y			Volksbank Romania	Y	Volksbank Serbia	Y
	NLB Bank	N	Magyar Takarekszövetkezeti Bank	Y			Banca Comerciala Romana	Y	Alpha Bank Serbia	Y
	Turkish Ziraat Bank Bosnia	N					UniCredit Tiriac Bank	Y	Vojvodjanska Bank	Y
	ProCredit Bank	N					BRD - Groupe Societe Generale	Y	Banca Intesa	Y
Sparkasse Bank	N					Raiffeisen Bank	Y	HypoAple-Adria Bank	Y	
								Raiffeisen Bank	Y	
Parent does not participate in VI	Bosna Bank International	N	KDB Bank	N	HVB Bank Latvia	Y	Egnatia Bank	N	NLB Bank	N
	ZepterKomerckBank BanjaLuka	Y	Volksbank	Y			ProCredit Bank	N	ProCredit Bank	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 Romexterra	N	Moskovska Bank	N
			Allianz Bank	N			Emporiki Bank	N	Credit Agricole	Y
			Budapest Hitel-ésFejlesztési Bank	Y					Findomestic Bank	Y
								KBC Bank	Y	

Table 10. Banks participating in the Vienna Initiative and horizontal meetings

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

VI country	Commitment letter	Parent banks	Subsidiaries	Participation September 2009 Brussels	Participation March 2010 Athens	
Hungary	Signed May 20, 2009 http://www.imf.org/external/np/cm/2009/052009.htm	Bayerische Landesbank	MKB Bank	x	x	
		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 Reaffirmed November 18, 2009 http://www.imf.org/external/np/cm/2009/032609.htm	Erste Group	Banca Comercială Română	x	x	
		Raiffeisen International	Raiffeisen Bank	x	x	
		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
			Raiffeisen International	Raiffeisen Bank	x	x
Bosnia	Joint concluding statement signed June 22, 2009 Bilateral letters signed by end-August 2009 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	x	x
Serbia	Signed March 27 2009 Reaffirmed Feb 26 2010 http://www.imf.org/external/np/cm/2009/032709.htm	Eurobank EFG	Eurobank EFG	x	x	
		Intesa SanPaolo	Bank Intesa	x	x	
		Raiffeisen International	Raiffeisen Bank	x	x	
		Hypo Alpe-Adria	Hypo Alpe-Adria Bank	x	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	Concluding statement signed September 11, 2009 Comfort letters signed January 2009 and February 2010 http://www.imf.org/external/np/country/2009/091409.htm	Bank DnB NORD	AS DnB NORD Bank	x	x	
		Nordea Bank	Nordea branch	x	x	
		Swedbank	Swedbank, Latvia	x	x	
			SEB	SEB Bank Latvia	x	x
Other banks		ING Bank			x	
		OTP Bank			x	

Table 11. Selection into the Vienna Initiative

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 one, five and ten percent level of significance, respectively.

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

Appendix 1. A timeline of the Vienna Initiative

October 26th 2008 – IMF approves US\$16.5 billion Stand-By Agreement for Ukraine.

November 6th 2008 – IMF approves €12.3 billion Stand-By Arrangement for Hungary.

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

December 23rd 2008 – IMF Announces €1.7 Billion Stand-By Agreement for Latvia, coordinated with the European Commission.

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

January 16th 2009 – IMF approves €402.5 million Stand-By Arrangement for Serbia

January 23rd 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.

February 27th 2009 – The heads of 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.

March 17th 2009 – Second VI meeting. IMF presents a distribution of burden sharing rules between home and host country authorities which is broadly agreed on and to 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, recapitalize subsidiaries following stress tests; home county national bank support packages can be used for supporting subsidiaries.

March 15th-June 15th 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.

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

April 25th 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.

May 4th 2009 – IMF approves €12.9 billion Stand-By Arrangement for Romania as part of a EUR 20 billion package of balance of payments support approved by the European Commission.

May 7th 2009 – EBRD makes investments worth over €400 million to UniCredit subsidiaries across eight countries in the ECA region.

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

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

June 22nd 2009 – Joint concluding statement signed for Bosnia and Herzegovina in Vienna.

July 8th 2009 – IMF €1.52 billion Stand-By Agreement for Bosnia and Herzegovina.

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

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

September 11th 2009 – Parent bank issue a concluding statement for Latvia in Stockholm.

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

September 24th 2009 – First ‘horizontal’ Full-Forum meeting of the Vienna Initiative in Brussels. Discussion of deleveraging and recapitalization 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, EC, EBRD, EIB, WB, ECB, CEBS.

October 5th 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, WB).

November 18-19th 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.

January 18th 2010 – Coordination meeting with the IMF, World Bank, EIB, EC 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).

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

February 26th 2010 – Follow-up meetings on Serbia (with exposure commitments relaxed on the back of good macroeconomic adjustment and recovery) and Bosnia in Vienna.

March 18-19th 2010 – Second 'horizontal' Full-forum VI meeting in Athens. Agreement 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, WB, ECB, and CEBS.

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

May 9th 2010 – IMF approves €30 billion Stand-By Arrangement for Greece.

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

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

July 26th-August 4th – Joint Commission-IMF-WB mission to Romania to discuss measures to accelerate the absorption of EU structural funds.

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

October 6th 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.

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

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

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