

The Impact of Country Risk Ratings and of the Status of EU Integration on FDI Inflows in CESEE Countries

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We analyze the determinants of foreign direct investment (FDI) inflows in the ten EU Member States, plus Croatia, in Central, Eastern and Southeastern Europe (CESEE) over the period from 1995 to 2011, with a particular focus on the effects of country risk ratings and the EU integration status on a country's attractiveness for FDI. We distinguish between twelve different risk ratings and seven stages of integration (non-EU country, potential candidate country, candidate country, negotiating country, EU Member State, ERM II member country and euro area country). Using quarterly data, we identify the market size and cost factors as the most important determinants, suggesting that market- and efficiency-seeking FDI were the most prevalent forms of FDI in the region. The host country's infrastructural environment also has the expected positive effect on FDI inflows. The effects of risk ratings turn out to be nonlinear in the sense that improvements in intermediate risk levels have the largest positive effect on FDI, while this effect diminishes in the case of upgrades at the highest levels. Turning to the status of EU integration, a more advanced stage represents an additional bonus over pure cost- and market-related factors, but only up to the onset of the global financial and economic crisis.

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1 Introduction

Central, Eastern and Southeastern Europe (CESEE) has long been considered a very promising destination for foreign capital. The deep and unprecedented transition from planned to market economies helped to attract substantial amounts of foreign direct investment (FDI) – see, inter alia, Hunya (2007); Mooslechner and Ritzberger-Grünwald (2009); and Nunnenkamp (2002). The advantage of the CESEE countries was generally to be found in their location within Europe, together with low corporate tax rates, relatively low wages and access to EU subsidies. A favorable investment climate, a highly skilled workforce and free access to the rest of the EU market added to this advantage. Campos and Kinoshita (2003) stressed the fact that CESEE and former Soviet Union countries had been industrialized prior to their transformation and could therefore count on a relatively cheap yet highly educated workforce. Brada, Kutan and Yigit (2003) added the aspect of differences in resource endowments to the list of the region's locational advantages. Furthermore, the geographic proximity of the CESEE countries to Western markets has been mentioned as a favorable characteristic by many authors, e.g. Kinoshita (2011). In addition, the prospect of continuous economic growth prior to the global financial and economic crisis was another argument in favor of the region as an attractive FDI destination. The transition process and accompanying structural reforms suggested that an improved and stable business environment would emerge. As a consequence of continuous and strong FDI inflows over the past one-and-a-half decades, the CESEE countries now record FDI-to-output ratios that are above average by global standards (Fillat-Castejón and Wörz, 2011).

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Given the interesting period of economic transition and the likely benefits of foreign capital as a catalyst for economic development, it becomes clear why the determinants of FDI to the CESEE region have been analyzed by so many authors over the past decade (e.g. Breuss, Egger and Pfaffermayr, 2001; Carstensen and Toubal, 2004; and Kalotay, 2006). At around the time of the accession of ten CESEE countries to the EU, in particular, many authors placed special emphasis on the influence of EU integration on the region's attractiveness for FDI (e.g. Bevan and Estrin, 2000; Campos and Kinoshita, 2003; and Eckert and Rossmeyssl, 2005). Some authors also drew attention to the influence of different types of political and legal risks, however (e.g. Busse and Hefeker, 2007; and Bucevska, 2009).

The global economic crisis caused a global decrease in FDI through reduced access to funding, gloomy economic prospects and increased levels of risk aversion (UNCTAD, 2009). Giurca Vasilescu (2009) moreover mentions the negative impact of foreign demand and increased exchange rate volatility on FDI flows. The CESEE countries have experienced a particularly steep decline in FDI inflows since the beginning of the global financial and economic crisis. In particular, the significant worsening of investors' attitudes to risk may have been an important factor. Therefore, it is interesting to examine what importance investors attribute to country risk ratings when deciding on investment projects, and whether this importance has changed since the start of the crisis.

This paper aims to identify the importance of individual determinants of the region's attractiveness for FDI, with a special emphasis on the influence of EU membership and country risk ratings. We analyze whether countries that are more closely integrated with the European Union were able to establish some kind of "EU anchor" both before and during the financial crisis, and how country risk ratings have impacted on this EU anchor, by way of a panel regression covering a sample of eleven CESEE countries (the ten EU Member States in CESEE plus Croatia) over the period from 1995 to 2011.

Our analysis adds three innovative aspects to the rather extensive existing literature on the topic. First of all, while most of the above-mentioned literature deals with data covering rather distant time periods (mainly 1995–2005), we are able to include all the key milestones in the region's FDI history to date, such as the emergence of the CESEE region as a destination for FDI once the transformational recession had been overcome, the accession of ten CESEE countries to the EU and the adoption of the euro by three of these countries, the crisis-related decline in FDI inflows and the aftermath of the global economic crisis.

Second, to the best of our knowledge, we are the first to make detailed distinctions between these countries' different stages of institutional integration. Most authors modeled EU integration with the aid of a dummy variable that takes a value of 1 when a certain "benchmark" event (such as the signing of the Europe Agreements or the date of EU accession) takes place and thereafter. By contrast, we distinguish between seven stages in the integration process (ranging from third-country status to the adoption of the euro).

Third, we explicitly allow for a nonlinear relationship between country risk ratings and FDI inflows, reflecting the view that improvements in perceived risk levels at an intermediate level (i.e. especially the move from sub-investment grade to investment grade) are likely to have a much stronger impact on FDI decisions than improvements at the upper or lower end of the rating spectrum.

The following section briefly reviews the relevant findings in the existing literature. Section 3 presents the data, the economic reasoning behind our choice of variables and our empirical framework, while section 4 contains the results and section 5 concludes.

2 Review of the Literature

Research on the determinants of FDI flows to the CESEE region has not been based on any particular theoretical or empirical model. Many papers focus on institutional features in the specific context of the transition of these countries to a market economy system (e.g. changes in infrastructure, the legal and business environment and political risk). Apart from such an explicit focus on the region, also economic fundamentals – including host market size, market growth, productivity, labor market conditions, macroeconomic stability and trade openness – have been proven to be significant determinants of FDI by various researchers, e.g. Resmini (2000); Campos and Kinoshita (2003); Brada, Kutan and Yigit (2003); Busse and Hefeker (2007); and Bucevska (2009).

Resmini (2000) used a gravity model to investigate sector-specific differences with respect to FDI determinants in the manufacturing industries of selected CESEE economies. Apart from market fundamentals, she concluded that progress in an economy's transition process is a key determinant of FDI inflows. Hence, the inclusion of a transition index seems important.

Campos and Kinoshita (2003) estimated the effect of agglomeration, institutional development, initial market conditions and factor endowments on FDI stocks. In their analysis, they compared the relevance of the aforementioned factors for FDI flows to Central and Eastern European countries as well as to Baltic countries and CIS economies. According to their panel data analysis, institutions and agglomeration economies are more important than economic variables in determining FDI flows to transition economies. This provides support for the hypothesis that investors are cautious when investing in transition economies, with political risk (stability of institutions, bureaucracy, rule of law, etc.) playing a crucial role. Moreover, their research found that investors tend to follow the actions of others (agglomeration theory).

Bevan and Estrin (2000) analyzed which factors actually determine country risk. In their view, country risk ratings reflect a country's economic, political and institutional performance. They identify private sector development, the quality of the privatization process, low government deficits, high reserve stocks and a high share of industrial output in GDP as factors that lead to better perceptions of country risk. While corruption has a significant negative impact on risk ratings, no evidence was found of EU accession announcements having a direct impact on risk ratings. They also related country risk ratings to FDI inflows and found support for a significant positive effect of good risk ratings in CESEE. In a later paper – Bevan and Estrin (2004) – however, they found no proof of market evaluations of country risk – as measured by country credit ratings published in the Institutional Investor magazine – having a significant influence on FDI flows to the CESEE region. They explain this contradictory result with the fact that at this later period in time, transition countries were already able to attract FDI inflows

irrespective of their respective country risk rating and argued that investors believed that the accession process was too big to fail.²

Bucevska (2009) estimated the impact of various economic and noneconomic variables on the stock of outward FDI of EU member countries in selected CESEE countries. She also found support for the hypothesis that agglomeration economies, the importance of making progress in the EU accession process and good risk ratings improve a country's ability to attract foreign capital.

Brada, Kutan and Yigit (2003) used a very different approach and calculated differences in FDI to developed market economies and to countries in transition. Furthermore, they used their findings to establish a reference model, which they employed to project FDI inflow levels that could be expected for transition economies on the basis of country-specific economic conditions. In addition, they took account of FDI-dampening transition effects. The shortfall in actual FDI flows in comparison with projected inflows was then explained by the deterrent effects of political instability. In their conclusions, they stress the importance of making continuous progress in the transition process and the necessity to maintain and establish political stability in order to generate investor confidence.

To sum up, the economic literature has found various institutional and macroeconomic factors to be important determinants of FDI inflows in transition economies. In particular, the progress made in the transition to a market economy system, political stability and an advanced stage in the EU integration process seem to provide promising competitive advantages, while the impact of country risk ratings on FDI inflows to CESEE may have varied over time.

It seems appropriate here to explicitly summarize the main arguments for a positive effect of the EU integration process on FDI:

- EU accession requires the full adoption of the Union's *acquis communautaire*. New member countries have to transpose the full body of EU law into their national legislation. This institutional convergence leads to more political, economic and legal stability. Thus, EU accession should improve an economy's business environment, which in turn makes it more attractive for foreign investors – see e.g. Narula and Bellak (2009); Kalotay (2006); Nunnenkamp (2002); Eckert and Rossmeissl (2005); and Backé et al. (2010). Baldwin, Francois and Portes (1997) describe the risk premium effect of EU accession: membership is expected to reduce the occurrence of unexpected changes in an economy's legal system, industrial standards and administrative procedures. Since extreme policy slippages might be prevented – see Backé et al. (2010) – CESEE countries will be perceived to be a less risky place to invest in. This not only helps to overcome the risk aversion of investors, but also cuts the risk premiums demanded on investments in the economy in question. Thus, investors face reduced capital costs and might identify accession countries as a more favorable destination for FDI than otherwise similar destinations in non-accession countries (Baldwin, Francois and Portes, 1997).

² In this context, the findings of Teles and Leme (2010) are worth mentioning. Their results show that country risk ratings are not only based on market fundamentals, but also reflect market sentiment. Using J.P. Morgan's EMBI+ indicator, they demonstrated that prejudice influenced risk ratings and that some countries were thus discriminated against in their risk assessment.

- Involvement in supranational economic structures significantly lowers transaction costs between foreign production and export (Bevan and Estrin, 2004). EU membership clearly helps to overcome the burden of trade barriers and offers access to additional markets.
- New EU members are also subject to rights and duties stemming from treaties and agreements signed by the EU with third countries. Hence, participating in the EU not only facilitates trade with other member countries, but also entitles accession countries to more favorable conditions under the EU's preferential trading arrangements with third countries.
- By achieving full EU membership, accession countries also gain full rights to take part in the decision-making mechanisms of the Union. Therefore, they have a say in the further shape of the EU's path of integration. Moreover, new EU members become participants in the EU budget. The EU's structural funds, in particular, should be mentioned in this context. They aim at supporting disadvantaged regions and countries that are lagging behind with their economic development. The outlook of such transfer payments promises improvements to the FDI environment in terms of physical and human capital (Kalotay, 2006).
- Finally, full membership may help to decrease the probability of administrative protectionism being applied to non-EU members (Kalotay, 2006). This is particularly important for CESEE countries since a major proportion of their capital inflows stems from EU countries (EBRD, 2011). In view of the fact that protectionist measures may still be holding back capital flows, EU membership could significantly strengthen the CESEE countries' positions in the European investment market.

However, EU membership is not perceived to be only beneficial for FDI inflows. The assessments below demonstrate that EU accession might have only moderate or even negative effects on the inflow of foreign capital:

- The adoption of the Union's *acquis communautaire* could increase the cost of doing business in new EU member countries. Especially the implementation of environmental protection standards and labor market regulations could undermine initial competitive advantages of the CESEE region (Kalotay, 2006).
- Narula and Bellak (2009) write that the FDI-promoting effects of participating in the EU decrease in importance as the number of EU Member States increases. The perceived "EU bonus" is currently shared by 27 countries, with even more candidate countries already waiting for accession. Hence, the advantages of membership are not as unequivocal as they were and might stop functioning as an incentive for FDI inflows.
- Eckert and Rossmeißl (2005) argue that the EU integration process also leads to cultural convergence. As a result, foreign companies might no longer find it necessary to overcome cultural differences by investing abroad. This reduction of "immaterial" proximity-seeking FDI inflows does not only affect the scale of capital inflows, but also prevents the inflow of critical resources that would strengthen the competitiveness of CESEE countries in terms of their attractiveness as a destination for FDI.
- EU membership is also connected with the outlook of participation in Stage Three of Economic and Monetary Union (EMU). Although adopting the euro

would reduce the exposure to unfavorable exchange rate developments, participation in EMU restricts a country's autonomy with respect to managing its currency's exchange rate and the possibility of using the exchange rate as a tool for keeping production costs competitive (Kalotay, 2006). The loss of especially this aspect of price competitiveness in production costs would mean the elimination of a valuable competitive advantage of the CESEE region.

- According to Nunnenkamp (2002), the final step of the accession process – full membership in the European Union – should not be expected to have major FDI-promoting effects. First, most of the accession countries will already have signed Europe Agreements with the EU, and this has brought them to the top of the list of the EU's preferential trading partners. Second, investors tend to seek first-mover advantages. Therefore, the incentive for investing in a potential EU member country is far stronger during the negotiations on accession than after the Union has actually been joined.

The empirical analysis in this paper will shed light on these diverging arguments on the effects of EU membership on FDI flows to CESEE transition countries. Furthermore, we will also analyze whether these countries benefited from an “EU anchor” during the global financial crisis that gave investors confidence in a time of great instability in global financial markets.

With the accession of ten CESEE transition countries to the EU in 2004 and 2007, interest in the topic seems to have faded. Most of the aforementioned literature deals with data that do not cover very recent periods (mainly 1995–2005). Furthermore, potential changes in the pull factors for FDI in the region in the aftermath of the global financial and economic crisis have not been analyzed thus far. A rather puzzling observation during the 2008–2009 crisis was the extent to which it affected the CESEE region. The crisis originated in the U.S.A., a highly developed country, and was quickly transmitted to other advanced economies. Most emerging regions were affected only later, and to a lesser degree. The CESEE region proved to be a clear exception to this rule, as it was hit severely by the downturn of FDI in early 2009. Hence, it seems of interest to examine whether increased EU integration – after having served as a bonus in attracting FDI during the transition phase – actually aggravated the downturn in FDI flows to the region or whether this was related to other factors. In contrast to the rather vast body of literature on the topic, our data sample extends up until 2011. As such, it covers all the key “milestones” of the CESEE region's FDI history to date, namely:

- the “emergence” of the CESEE region as a destination for FDI;
- the establishment of a competitive position as an FDI host country;
- EU accession and adoption of the euro by three countries in the region;
- the global economic crisis; and
- the aftermath of the global economic crisis.

3 Empirical Setup

Our sample comprises 11 countries with a successful record of EU integration: Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia. The data cover quarterly observations in the period from 1995 to 2011.

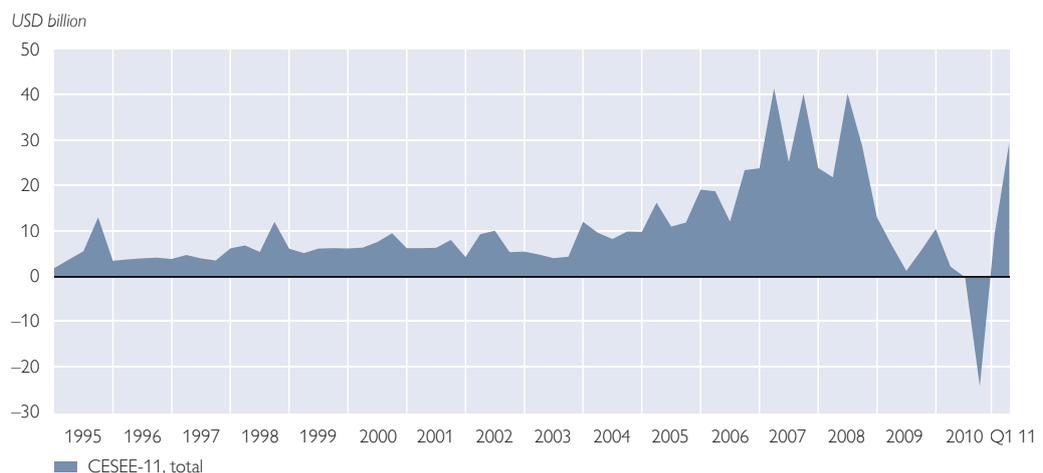
Our main focus is on FDI inflows to the region. We use data for FDI inflows in millions of U.S. dollars obtained from the IMF's International Financial Statistics

(IFS) database as our dependent variable.³ The analysis of FDI patterns in the CESEE region is especially interesting as their transition from planned to market economies resulted in a large-scale privatization of state-owned companies and generated government policies that encouraged FDI (Richter, 2009). This caused FDI inflows to gradually pick up after the post-transitional recession. Chart 1 shows that as from 1995, FDI flows to the CESEE region rose continuously until 2007.⁴ The increase in FDI was especially pronounced in the years of buoyant economic growth in the region. On the one hand, this surge in FDI prior to the global recession reflected a global trend in FDI; on the other hand, it was driven by some catching-up in terms of FDI inflows in Poland – the largest economy in the region – and Slovakia, as well as by lagged developments in Bulgaria and Romania (Hunya, 2007). As early as in 2007, FDI inflows to the region started to fluctuate around their peak levels. The reduction in FDI in 2008–2009 was a global phenomenon caused by the financial crisis and turned out to be very pronounced in the CESEE region as well.⁵

Chart 2 shows that the impact of the financial crisis differed from country to country in the region. FDI inflows to Estonia, Romania, Poland, Slovenia, Croatia and the Czech Republic showed some resilience. Their annualized FDI inflows are comparable before and after the start of the crisis. In Estonia, the annualized FDI inflows have recently even risen above the average level recorded throughout the period from 1995 to 2008, despite a sharp decline in early 2009. Slovakia, Latvia and Hungary are found to be the biggest losers, their average annualized FDI

Chart 1

Real Quarterly FDI Inflows in CESEE-11, 1995–2011



Source: Authors' calculations based on the IMF's IFS.

Note: FDI inflows are deflated and seasonally adjusted.

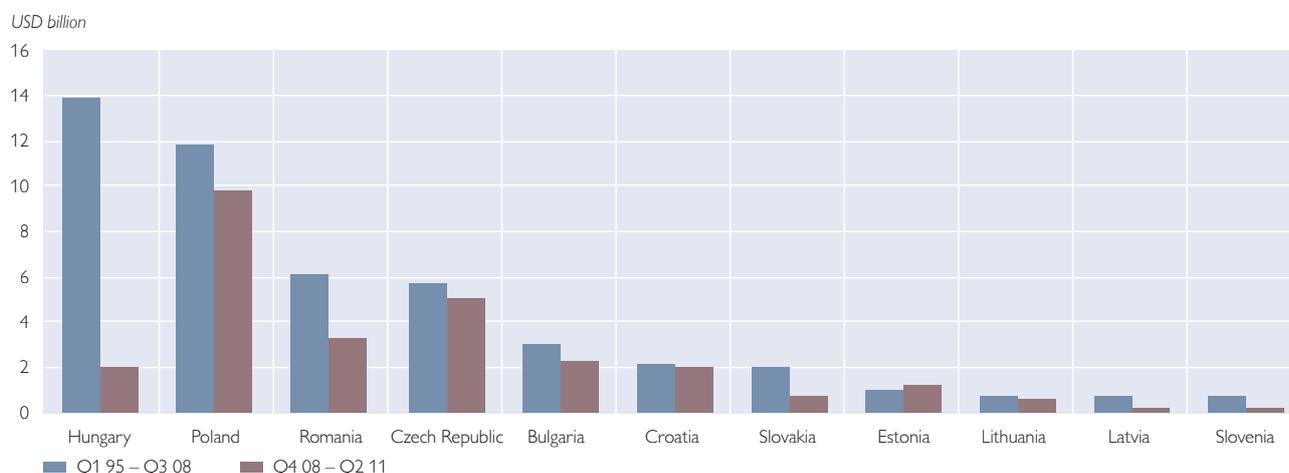
³ All data were downloaded through the FIW database tool (see www.fiw.ac.at). FDI inflows were first deflated and then seasonally adjusted before they were entered in the empirical estimations in log-form.

⁴ Fidrmuc and Martin (2011) mention in their analysis of FDI in CESEE countries that this growth in FDI inflows needs to be seen in the context of the region's gradual integration into the EU, which is reflected in the large proportion of capital flows to the region that originated in EU Member States.

⁵ As set out in UNCTAD (2010), the decline was smaller in Europe than in the U.S.A. and Japan, but it affected the CESEE countries considerably more severely than other parts of Europe.

Chart 2

Average Annualized Real FDI Inflows, Country Breakdown



Source: Authors' calculations based on the IMF's IFS.

Note: FDI inflows are deflated and seasonally adjusted.

inflows having more than halved in absolute terms since the start of the financial crisis. Hungary represents an outlier and needs to be addressed separately: in 2010, it experienced an exceptionally marked drop in the level of FDI inflows. This notwithstanding, it is still one of the countries that registered the highest FDI growth rates, and was able to secure the highest FDI inflows, throughout the entire period from 1995 to 2011.

Our main goal is to identify the determinants of these rather volatile developments in FDI inflows to the region, with special emphasis on risk ratings and the status of EU integration. Our choice of explanatory variables was driven by previous empirical research conducted in this field and follows the approaches of authors such as Campos and Kinoshita (2003), Resmini (2000), and Bevan and Estrin (2004). After having established a robust model that explains FDI inflows to the CESEE region sufficiently well, our main variables of interest – country risk and the status of EU integration – are introduced to the baseline regression. Our final specification is given in equation 1, whereby all explanatory variables are lagged by one year in order to avoid endogeneity and to reflect the time lag required between investment decisions and their implementation:

$$\begin{aligned} \ln fdi_{i,t} = & \alpha + \beta_1 \ln GDP_{i,t-4} + \beta_2 \ln growth_{i,t-4} + \beta_3 \ln open_{i,t-4} + \\ & + \beta_4 \ln ulc_{i,t-4} + \beta_5 \ln tax_{i,t-4} + \beta_6 \ln road_{i,t-4} + \beta_7 \ln risk_{i,t-4} + \\ & + \beta_8 \ln risk^2_{i,t-4} + \beta_9 \ln EU_{i,t-4} + \mu + \varepsilon_{it} \end{aligned} \quad (1)$$

To control for the impact of classic determinants of FDI, the following variables are used in our model:

First, we control for differences in market size through the log of GDP. Market size is particularly important for market-seeking FDI, as the size of an economy influences product demand, the capacity to supply and the potential for economies of scale. The expected positive influence of the host country's GDP on FDI inflows is confirmed in e.g. Bevan and Estrin (2000). According to the review of the

literature by Chakrabarti (2001), market size is even seen as the most accepted significant determinant of FDI flows.

Furthermore, economic growth appears to be a useful proxy for the measurement of the market's potential and dynamics. High rates of economic growth are proof of promising market conditions that should attract foreign investors, so that its coefficient is assumed to be positive. Bevan and Estrin (2000) found strong support for the hypothesis of FDI-promoting effects of market growth. Busse and Hefeker (2007), for example, mentioned the endogeneity of the relationship between economic growth and investment inflows.⁶

Openness to trade was also found to be a significant determinant by many authors. For example, Campos and Kinoshita (2003) report a positive and significant coefficient for trade openness in the case of their sample of Eastern European and Baltic countries. However, the impact of trade barriers on FDI is not straightforward since it depends very much on the type of foreign investment involved. Likewise, Busse and Hefeker (2007) address the case of horizontal FDI, which is assumed to be driven by the so-called tariff-jumping hypothesis. Higher trade barriers increase the costs of serving a market via arm's-length trade in comparison with those of serving it through FDI. It may moreover protect the foreign investor's output against other foreign competitors, so that higher trade barriers could actually attract more FDI. We measure trade openness here as the ratio of imports and exports to GDP, with the sign of the coefficient being expected to be positive. The fact that low-cost production opportunities were initially one of the major advantages of the region leads to the assumption that export-oriented FDI is more important than horizontal FDI. However, considering the rapid convergence of these countries, the relevance of market-seeking FDI should not be underestimated.

As has already been mentioned, cost differences in FDI host countries are important determinants of flows for efficiency-seeking FDI. Lower production costs and a tax-friendly business environment constitute major locational advantages for many countries in the CESEE region. Therefore, unit labor costs and corporate tax rates are also included in the model.⁷ A strong negative influence of unit labor costs (and tax rates) on the observed inflow of FDI would support the hypothesis of cost advantages being one of the major competitive advantages of the region. This would moreover lead to the conclusion that efficiency-seeking FDI might be the prevalent motivation behind FDI flows to CESEE countries.

Finally, in line with the economic literature, the model also controls for differences in the state of infrastructure and transition. The effects of physical infrastructure on the direction of FDI will be assessed by introducing a measure obtained from the United Nations Economic Commission for Europe (UNECE): the length of roads in each country.⁸

⁶ As mentioned earlier, all explanatory variables are introduced with a one-year lag in order to mitigate this problem.

⁷ Data on labor costs stem from the Vienna Institute for International Economic Studies (wiiw). The measure used in the regression is an index tracking the development of unit labor costs in comparison with the reference year 2005. Historical corporate tax rates were attained from Mintz and Weichenrieder (2010) and the annual KPMG Corporate Tax Rate Surveys – KPMG International (1995–2011).

⁸ Transition indicators, e.g. that of the EBRD, could be used to capture the effect of the attained level of transition. Unfortunately, institutional developments, which account for a major part of the EBRD's transition indicator, are highly correlated with the level of EU integration. In order to avoid bias-causing multicollinearity, we chose to focus on road infrastructure only, as we already largely cover institutional reforms through our EU integration variable.

The model is estimated as a static panel. As mentioned above, all explanatory variables are entered with a four-period (= one-year) lag, as suggested by several authors (e.g. Busse and Hefeker, 2007; and Bevan and Estrin, 2004). FDI decisions represent decisions on lasting investments, so that there is likely to be a certain time lag before decision makers react to changes in the relevant variables that influence these investment decisions, not least on account of the fact that information on these variables likewise becomes available only with some time lag. We use a random effects estimator with robust standard errors (i.e. correcting for heteroskedasticity). Our choice of random effects estimator was driven by both statistical reflection (based on the Hausman test) and economic considerations (the selection of countries implies a rather homogenous sample in which variations occur mainly over time).

3.1 Country Risk Ratings

The review of the literature above already suggested that country risk entails many different components: political, institutional and economic risk. Hence, alternative indicators can be found, with each addressing a certain aspect of country risk. For example, the EBRD transition index and the *Beri S.A. Operation Risk Index* refer to the quality of the country's institutional landscape. Economic risk is often assessed in sovereign default ratings provided by agencies like Standard & Poor's, JPMorgan Chase or Moody's. Information on political risk can be found in the *International Country Risk Guide* published by the Political Risk Services (PRS) Group, for instance. Some country risk indicators, such as the Heritage Foundation's *Index of Economic Freedom*, address various aspects of country risk simultaneously. The authors of empirical analyses very often observe a positive relationship between political and institutional risk, on the one hand, and FDI, on the other, i.e. that more stable countries (with a higher risk rating) obtain larger FDI inflows (e.g. Brada, Kutan and Yigit, 2003; Resmini, 2000; and Busse and Hefeker, 2007).

The country risk ratings used here are the sovereign currency long-term debt ratings provided by Standard & Poor's: "The sovereign rating methodology (...) addresses the factors that affect a sovereign government's willingness and ability to service its debt on time and in full" – see Standard & Poor's (2011). These ratings therefore relate largely to the economic part of country risk. It describes a country's solvency position, but sees it in relation to the strength of the institutional and governmental system backing the economy. We chose to use foreign currency ratings as these also consider restrictions on transfers and convertibility (although, in the more recent years, the latter can largely be dismissed as a consequence of increasing EU integration), and thus reflect the influence of exchange rate movements on profit repatriation. In general, even for private issuers, the capacity to repay one's liabilities may be lower in foreign currency than in local currency, analogous to the sovereign government's relatively lower capacity to repay external versus domestic debt. Hence, we see foreign currency risk ratings as providing more relevant information for risk-averse investors. Alternatively, ratings relating to the political or institutional components of country risk could be used as well – as in Campos and Kinoshita (2003) and Resmini (2000). However, these risk measures are intrinsically linked to the status of EU integration. In order to avoid overly high collinearity between the

Table 1

Foreign Currency Long-Term Debt Ratings, 1995–2011

	BG	HR	CZ	EE	HU	LV	LT	PL	RO	SK	SI
1995			13		10			9		8	
1996			15		10			11		11	15
1997		11	15		11	12	11	11	8	11	15
1998	7	11	15	13	11	12	11	11	7	11	15
1999	7	11	14	13	12	12	11	12	5	10	15
2000	7	11	14	13	13	12	11	12	5	10	15
2001	7	11	14	13	14	12	11	13	6	10	15
2002	8	11	14	14	14	12	12	13	7	11	15
2003	9	11	14	14	14	13	13	13	8	12	16
2004	10	11	14	14	14	13	14	13	9	13	17
2005	11	12	14	15	14	14	14	13	10	14	17
2006	12	12	14	15	13	14	15	13	11	15	18
2007	12	12	14	15	13	13	15	14	11	15	18
2008	12	12	15	15	13	13	14	14	11	15	18
2009	11	12	15	15	11	10	12	14	10	16	18
2010	11	12	15	15	11	9	12	14	10	16	18
2011	11	11	15	15	11	10	12	14	10	16	18

Source: Standard & Poor's.

Note: 20 = AAA; 19 = AA+; 18 = AA; 17 = AA-; 16 = A+; 15 = A; 14 = A-; 13 = BBB+; 12 = BBB; 11 = BBB-; 10 = BB+; 9 = BB; 8 = BB-; 7 = B+; 6 = B; 5 = B-; 4 = CCC; 3 = CC; 2 = C; 1 = D.

two main variables of interest, we opted for sovereign debt ratings.⁹ Table 1 provides an overview of the credit rating history of the respective CESEE countries in our sample:

In our empirical specification, country risk is introduced in a nonlinear fashion in order to reflect the fact that an upgrade from sub-investment to investment grade (meaning, in our case, from BBB- to BB+) is likely to have a stronger influence on investors' decisions than a further improvement within the spectrum of different investment grades, such as an increase from AA- to AA, the highest level attained in our sample (by Slovenia in 2006). The move from junk status to investment grade was experienced at varying points of time by six countries in our sample, with Latvia the only country that was subject to a downgrade from investment to sub-investment status in the course of the crisis (in 2009).

3.2 Status of EU Integration

Undoubtedly, the level of integration achieved in the European Union by far exceeds the integration efforts undertaken by its counterparts (e.g. NAFTA or ASEAN). The establishment of a single market by assuring free movement of people, capital, goods and services, and the introduction of a common currency in major parts of the EU is unique to Europe. To test the impact of EU membership on the inflow of foreign capital, many authors used EU dummy variables in their regressions. Bevan and Estrin (2004) assume a structural break triggered by the EU enlargement announcement in Cologne in 1998. Therefore, they employ a Cologne dummy, taking the value 0 for all countries until 1998. Bucevska (2009)

⁹ Bevan and Estrin (2000, 2004) also applied sovereign risk ratings, published in the *Euromoney Institutional Investor Magazine*, to account for country risk in their analysis of FDI determinants.

added a dummy variable to her model, which takes the value 1 for countries that have started official accession negotiations with the EU, and the value 0 otherwise.

Such an approach does not reflect the full dimensions of EU integration, which is usually a lengthy and stepwise process. Richter (1997) defined different stages of integration for acceding countries: pre-accession stages covering the period up to the start of the accession talks and thereafter the period from the start of accession talks to formal accession. Furthermore, he distinguished two post-accession stages: the period from formal accession to the end of the last important derogation with respect to full EU integration and the period starting immediately after the phasing-out of the last important derogation. In our paper, we explicitly take account of this differentiated process. To capture the effect of different integration stages, we distinguish between potential candidates, candidates, candidates that have already started official accession negotiations and EU members. Furthermore, EU members are broken down into members, members participating in ERM II and euro area members. These further integration steps within the EU imply the absence of exchange rate risk and related transaction costs, which might attract additional investors from Western Europe. Thus, we build a categorical variable with seven categories. Using different levels of integration and tracking the countries over one-and-a-half decades, this variable allows for sufficient variation in our sample, although most of the countries observed joined the EU at roughly the same time.

Table 2 illustrates the EU integration process for all the countries in our sample over the period from 1995 to 2011:

Table 2

Status of EU Integration, 1995–2011

	BG	CZ	EE	HR	HU	LT	LV	PL	RO	SK	SI
1995	2	1	2	1	2	2	2	2	2	2	1
1996	2	2	2	1	2	2	2	2	2	2	2
1997	3	3	3	1	3	3	3	3	3	3	3
1998	3	4	4	1	4	3	3	4	3	3	4
1999	3	4	4	1	4	3	3	4	3	3	4
2000	4	4	4	2	4	4	4	4	4	4	4
2001	4	4	4	2	4	4	4	4	4	4	4
2002	4	4	4	2	4	4	4	4	4	4	4
2003	4	4	4	2	4	4	4	4	4	4	4
2004	4	5	6	3	5	6	5	5	4	5	6
2005	4	5	6	4	5	6	6	5	4	6	6
2006	4	5	6	4	5	6	6	5	4	6	6
2007	5	5	6	4	5	6	6	5	5	6	7
2008	5	5	6	4	5	6	6	5	5	6	7
2009	5	5	6	4	5	6	6	5	5	7	7
2010	5	5	6	4	5	6	6	5	5	7	7
2011	5	5	7	4	5	6	6	5	5	7	7

Source: European Commission.

Note: 1 = third party; 2 = potential candidate; 3 = candidate; 4 = negotiations; 5 = EU Member State; 6 = ERM II member; 7 = euro area member.

4 Drivers of FDI in CESEE Countries: Some Empirical Results

4.1 General Determinants of FDI in CESEE Countries

The estimation results obtained on the basis of equation 1 for our sample of 11 CESEE countries are given in table 3 below. Let us first discuss the results of a baseline specification that excludes our measures of EU integration and country risk. Our choice of control variables already has a rather good fit with the data: 45% of the overall (between and within) variation in the data is explained by the model (column 1 in table 3).

Market size, proxied by the log of GDP, has a strong and highly robust positive effect on the inflow of foreign capital, i.e. FDI inflows expand in proportion to market size. This provides evidence of the existence of market-seeking FDI in CESEE countries and is in line with the findings in the literature. GDP growth, by contrast, did not emerge as a significant determinant of FDI flows.

Openness to trade again has a positive impact on FDI inflows, even though the coefficient becomes insignificant when the EU integration variable is entered. Since EU integration by nature leads to the liberalization of a country's external economic relations, the effects attributed to a more liberal trade regime are possibly captured by the EU variable as well. Nevertheless, given the positive and significant coefficient in all other specifications, this confirms the findings of Busse and Hefeker (2007) on the influence of market openness on FDI.

Table 3

Determinants of FDI Inflows in CESEE Countries

	Baseline	Risk	EU	Risk+EU
Market size	1.083 *** 0.191	0.933 *** 0.047	0.975 *** 0.197	0.892 *** 0.046
Growth	0.006 0.010	-0.003 0.010	0.009 0.010	-0.002 0.010
Openness	0.497 * 0.226	0.783 *** 0.192	0.393 0.234	0.591 ** 0.193
Unit labor costs	-0.012 *** 0.002	-0.007 *** 0.002	-0.012 *** 0.002	-0.011 *** 0.002
Taxes	-0.034 *** 0.010	-0.041 *** 0.009	-0.026 ** 0.010	-0.027 ** 0.009
Infrastructure	0.001 ** 0.000	0.000 0.000	0.001 ** 0.000	0.000 0.000
Risk		0.393 *** 0.086		0.574 *** 0.094
Risk ²		-0.020 *** 0.004		-0.030 *** 0.004
EU			0.113 * 0.048	0.229 *** 0.054
Constant	-2.894 1.883	-3.237 *** 0.819	-2.332 1.916	-4.438 *** 0.814
No. of observations	469	467	469	467
R ² within	0.204	0.158	0.210	0.194
R ² between	0.681	0.831	0.666	0.831
R ² overall	0.453	0.519	0.451	0.535
Chi ²	114.5	532.7	125.3	606.1

Source: Authors' calculations.

Note: GLS estimation results with Huber/White sandwich estimates of variance; t-values are reported below coefficients; *, **, and *** indicate statistical significance at the 90%, 95% and 99% confidence levels, respectively.

Moreover, the results provide rather strong evidence of the importance of cost factors. Both cost variables – taxes and unit labor costs – display the expected negative and significant coefficient. Thus, not only market-seeking but also efficiency-seeking FDI motifs play an important role for the region. An increase of 1 percentage point in corporate tax rates reduces FDI inflows by roughly 3%, and an increase of one unit in the index of unit labor costs triggers a 1% fall in FDI inflows. This is in line with the empirical results obtained by Campos and Kinoshita (2003) and Bevan and Estrin (2004).

The beneficial effects of a well-developed infrastructure are also supported by our results, even though the coefficient on this variable is somewhat less robust to the inclusion of our risk variable.

In column 2 of table 3 we add country risk ratings to our model. In fact, the most significant FDI-promoting effects are expected to result from a rating upgrade from sub-investment to investment grade, hence at some inter-

mediate level of country risk. Further upgrades, although they are clearly expected to promote FDI inflows further, may well show diminishing effects. In order to capture this nonlinearity, we chose a quadratic specification, as mentioned above. Hence, we include both risk and the square of our categorical risk variable, which significantly improved the fit of the model. Our hypothesis implies that higher (= better) risk ratings will lead to higher FDI inflows since investors are assumed to be risk-averse. Therefore, the overall coefficient on country risk is expected to be positive. This is the case for the joint impact of the risk variables when looking at the results of columns 2 and 4 in table 3. The risk variable registered a positive and significant coefficient, whereas $risk^2$ displays a negative coefficient, which was expected as well. As explained earlier, the $risk^2$ variable should account for the effect that FDI inflows seem to react less markedly to improved country risk ratings once a certain risk threshold has been reached. According to the regression results, a significant influence on FDI inflows can be attributed to both risk variables. The magnitude of the impact of the standard risk variable on FDI is particularly high. The coefficient reported in column 4 promises an increase of 57.4% in FDI inflows if the country improves its risk rating by one level. This is dampened only slightly by the negative results for the $risk^2$ variable.

Finally, the effects of EU integration on a country's ability to attract foreign capital are discussed (see column 3). The EU integration variable displays a positive and significant coefficient, the magnitude of which is again rather high.¹⁰ This supports the hypothesis of a certain "EU bonus" in competition for FDI inflows. Increasing ties with the European Union have helped to attract foreign capital. The regression results in column 3 show that moving one level further up on the EU integration ladder leads to an 11% increase in FDI inflows. A look at column 4 shows that this effect even doubles when further controlling for the country's international risk assessment.

4.2 FDI Determinants During the Global Crisis

In order to assess the relevance of the above-mentioned variables during and after the global financial crisis, we extend the model by a crisis dummy and several interaction terms, given in equation 2 below:

$$\begin{aligned} \ln fdi_{i,t} = & \alpha + \beta_1 \ln GDP_{i,t-4} + \beta_2 \ln growth_{i,t-4} + \\ & + \beta_3 \ln open_{i,t-4} + \beta_4 \ln ulc_{i,t-4} + \beta_5 \ln tax_{i,t-4} + \\ & + \beta_6 \ln road_{i,t-4} + \beta_7 \ln risk_{i,t-4} + \beta_8 \ln risk^2_{i,t-4} + \\ & + \beta_9 \ln EU_{i,t-4} + \beta_{10} \ln crisis_t + \beta_{11} \ln crisis * risk_{i,t-4} + \\ & + \beta_{12} \ln crisis * EU_{i,t-4} + \mu_i + \varepsilon_{it} \end{aligned} \quad (2)$$

The results are given in table 4. Our crisis dummy is designed to take the value 1 for all observations as from the fourth quarter of 2008, the period covering the crisis itself and its aftermath. In line with the observed fall in global FDI (UNCTAD, 2009), we can read from column 1 in table 4 that FDI inflows have been reduced significantly since the start of the crisis.

¹⁰ Once again, the EU variable was defined as a categorical variable ranging from 1 to 7, with 7 the highest level of EU integration (euro area member).

Table 4

**Determinants of FDI Inflows in CESEE Countries:
Controlling for the Crisis Impact**

	Crisis 1	Crisis 2	Crisis 3	Crisis 4
Market size	0.917 *** 0.046	0.915 *** 0.045	0.914 *** 0.045	0.914 *** 0.047
Growth	-0.022 * 0.010	-0.020 0.010	-0.024 * 0.011	-0.025 * 0.011
Openness	0.819 *** 0.187	0.819 *** 0.186	0.822 *** 0.185	0.800 *** 0.187
Unit labor costs	-0.001 0.002	-0.002 0.002	-0.001 0.002	-0.000 0.002
Taxes	-0.025 ** 0.009	-0.025 ** 0.009	-0.025 ** 0.009	-0.025 ** 0.009
Infrastructure	0.001 *** 0.000	0.001 ** 0.000	0.001 ** 0.000	0.001 * 0.000
Risk	0.546 *** 0.092	0.515 *** 0.091	0.527 *** 0.091	0.572 *** 0.096
Risk ²	-0.029 *** 0.004	-0.027 *** 0.004	-0.028 *** 0.004	-0.031 *** 0.005
EU	0.212 *** 0.055	0.211 *** 0.055	0.216 *** 0.055	0.221 *** 0.056
Crisis	-0.923 *** 0.165			-1.060 0.889
Crisis*Risk		-0.061 *** 0.012		0.099 0.064
Crisis*EU			-0.167 *** 0.032	-0.231 0.186
Constant	-5.457 *** 0.799	-5.175 *** 0.793	-5.273 *** 0.798	-5.560 *** 0.816
No. of observations	467	467	467	467
R ² within	0.246	0.238	0.238	0.242
R ² between	0.834	0.834	0.840	0.841
R ² overall	0.561	0.558	0.561	0.563
Chi ²	666.2	656.0	661.7	689.6

Source: Authors' calculations.

Note: GLS estimation results with Huber/White sandwich estimates of variance; t-values are reported below coefficients; *, **, and *** indicate statistical significance at the 90%, 95% and 99% confidence levels, respectively.

The inclusion of crisis dummies seems to be important and further improved the fit of the econometric model. The remaining control variables are largely robust to this new addition. The impact of the market size and tax rates is robust in comparison with the results of the model specification without crisis dummies. Trade openness and infrastructure are now significant across all estimation variations, whereas the variable accounting for unit labor costs lost its significance, but retained its negative coefficient.

Column 2 in table 4 displays the results of the risk-crisis interaction term. This term should help us to assess whether investors have become more sensitive to country risk since the start of the crisis. The coefficient on the interaction term is negative and significant. Thus, since the beginning of the crisis, the positive effect of better risk ratings has been reduced. Comparing this to the coefficient on country risk, the effect is small, however. The risk-crisis interaction term loses its significance (and becomes positive) in the model modification reported in column 4, where all the crisis-related dummies are added to the estimation.

Similar results can be observed for the EU crisis interaction term, which

has a negative sign and is highly significant at the 0.1% level. Adding this to the coefficient of the EU variable still leaves us with a positive overall impact, although it is much smaller. Again, therefore, the EU integration bonus has been reduced since the beginning of the crisis. However, this negative coefficient is not robust. It loses its significance when the crisis dummy and the risk-crisis interaction term are added to the model. Thus, during the financial crisis, higher EU integration levels did not support the attractiveness for foreign capital to the same extent as before. Hence, there is no evidence of an additional “EU bonus” during the financial crisis, which might be explained by a loss of investor confidence on account of the fact that the European Union and the euro area were struggling with recessions and debt crises themselves.

4.3 Robustness

In order to test the robustness of the obtained regression results and to find out more about the sensitivity of the individual variables, several model variations were estimated.¹¹

First, the dependent variable was replaced by two other measurements of the FDI performance of the respective countries, namely FDI growth and the ratio of FDI to gross fixed capital formation as a dependent variable. This resulted in a considerably lower explanatory power of the model, suggesting that an analysis of FDI growth and the FDI ratio call for different model specifications that may be related to the very pronounced volatility of FDI flows.

Next, the robustness of trade openness was examined. Instead of using the ratio of imports and exports to GDP, we focus on the ratio of exports to GDP alone. Especially when assessing the importance of the export platform hypothesis for FDI flows to the CESEE region, this might be more relevant. The results are highly robust to this change in one of the explanatory variables. They only differ in terms of magnitude; the openness variable registered higher coefficients in this modification.

Finally, GDP growth was replaced by the (logged) level of GDP per capita, which examines the impact of a country's stage of development on FDI. The results for the coefficient on GDP per capita are often inconsistent for the eight specifications, but all other control variables are robust to this change.

5 Conclusions

The analysis of the determinants of FDI flows to CESEE transition economies received much attention in the recent economic literature, especially around the time when ten of the eleven countries under review joined the EU.

In this paper, we analyze the determining powers of various variables for FDI inflows to these countries over the whole period from 1995 to 2011. This period includes important milestones for the evolution of FDI in the CESEE countries, and thus provides a number of valuable new insights. On the one hand, we examine whether additional FDI-promoting effects are triggered by upgrades in country credit ratings and by an intensifying EU integration process. On the other hand, we investigate whether the role of traditional drivers of FDI has changed during the global financial crisis.

The results obtained from our static random-effect estimation model show that market-seeking and efficiency-seeking FDI seem to be very important for CESEE transition economies. The coefficients representing these factors are robust and significant. Moreover, a good road infrastructure and the countries' trade openness proved to be of relevance to foreign investors.

Likewise, a higher level of integration with the European Union helped to attract foreign capital, but this "EU bonus" lost its power during the financial crisis. This result could indicate a renewed risk aversion with respect to the CESEE transition countries, but it may also reflect a general reluctance to invest in the EU in view of the intensification of the ongoing crisis in some peripheral euro area countries. Furthermore, the estimation results show that country risk ratings

¹¹ Estimation results of these model modifications are available from the authors on request.

played a major role in the decision-making process of foreign investors during the period from 1995 to 2011. The relationship between country risk and FDI was found to be nonlinear. The highest effects on FDI were observed at intermediate risk levels, at the point where a country moves from sub-investment to investment grade. This seems to trigger new FDI most strongly. The reaction of FDI inflows to improved risk ratings starts to diminish again at higher risk ratings. The question whether the impact of country risk on FDI was intensified as a result of the increased risk perception caused by the crisis was also examined in the empirical analysis. Interestingly, no support for an increased importance of country risk as a determinant of FDI flows during and after the financial crisis was found.

Summing up, FDI seems to be driven by economic fundamentals such as market size, cost factors and a liberal trade regime. Additional factors influencing locational decisions of foreign investors have been found to be a good infrastructure, country risk ratings and a close relationship with the European Union.

Therefore, it can be concluded that governments should follow a range of interrelated policies in order to attract the inflow of foreign direct investment, which is of relevance when it comes to economic development and the continuation of the catching-up process. These policies include not only appropriate tax systems and labor market regulation that improve the cost structure of a country's industries, but also measures that support the physical infrastructure of the economy, as well as a commitment toward deeper economic integration in the European context. Finally, macrofinancial stability, as reflected in country risk ratings, must be borne in mind. The nonlinearity in the relationship between risk ratings and FDI inflows suggests that such stability is of particular relevance for countries that currently face lower risk ratings.

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Annex

Table A1

List of Variables Used and the Sources of Data

FDI (= dependent variable)	Log of FDI inflows in USD million, deflated with GDP deflator, seasonally adjusted Source: IMF's IFS, obtained from FIW (www.fiw.ac.at).
Market size	Log of GDP in USD million, deflated with GDP deflator, seasonally adjusted Source: IMF's IFS, obtained from FIW (www.fiw.ac.at).
Growth	GDP year-on-year growth in % Source: Authors' calculations based on the IMF's IFS.
Openness	Trade openness calculated as: (imports + exports) / GDP Source: Authors' calculations based on the IMF's IFS and DOTS.
Unit labor costs	Unit labor cost index, reference year: 2005 = 100 Source: wiiw.
Taxes	Corporate tax rates (on distributed profits) Source: KPMG International, and Mintz and Weichenrieder.
Infrastructure	Infrastructural development level: length of motorways in km Source: UNECE.
Risk	Country risk ratings: foreign currency long-term debt ratings. Source: Standard & Poor's.
EU	Level of EU integration Source: Authors' summary based on information obtained from www.ec.europa.eu .
Crisis	Dummy variable, takes a value of 1 as from Q4 2008, and zero otherwise.