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Political Risk, Institutions and Foreign Direct Investment: How Do They Relate in Various European Countries?

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1. INTRODUCTION

UNCERTAINTY and risk are inherent to economic environments, particularly those characterised by high capital mobility, worldwide financial shakeouts and the restructuring of international ties (as in the case of the current crisis). Contemporary economics stresses the importance of institutions, as the 'rules of the game' in a society guiding and reducing uncertainty and transaction costs in human interactions (Stiglitz, 1998). The real performance of economic institutions differs widely among countries, underpinning or impeding the businesses and their transaction costs. By adopting a cross-country comparative approach, the current paper empirically tests the extent to which decisions to invest in a given group of countries (as opposed to another group) are influenced by actual or perceived risk factors associated with investment *ceteris paribus.*

We examine the risk associated with socio-political institutions and governance, which for the purpose of the current paper will be called 'political risk'.[1] The key issue is to test how economic and political risk coact in affecting foreign direct investment (FDI) inflows into a particular set of host countries over the period 1995–2008. In the abundant literature regarding FDI, only a few studies include political risk as a relevant variable. Discussions of the relationship between risk and FDI have generally tended to be embedded in the context of traditional FDI macroeconomic drivers such as labour costs, factor endowments or level of infrastructure; in the present international context, these seem to be necessary but insufficient determining factors. Institutions are not linearly dependent complements to economic factors. Akerlof and Shiller (2009) doubt that real decision-making can be limited to economic rationality as approximated by mainstream economics. For example, there are psychological factors ('animal spirits'), whose expectations reflect the institutional set-up in a given society: its

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[1] Political risk can be associated with exposure to losses due to man-made institutional constraints that discriminate among economic agents, striking a bias in the allocation of resources. Thus, it is a factor that acts beyond traditional economics as an interference of political institutions in market-based economies. Our paper tests how nonmarket factors related to policies, social governance, property rights, public goods and collective action modify investors' decision-making in various groups of countries.

values, path dependency or local conflicts of interest. In this regard, institutions can be dominant drivers of long-term development.

Another qualification should also be considered: the recent boom in meta-analysis of economic research reveals that economic theories are too often falsified by empirical data or that the spectrum of empirical conclusions is so varied and conditional that their universal validity shrinks to particular cases. Such are the results of research on FDI spillovers (Wooster and Diebel, 2010; Havranek and Havrankova, 2011, 2012, 2013), which imply that decision-making of investors is too complex to be captured by present economic theories. In this paper, we test the hypothesis that patterns of decision-making regarding investments depend to a large extent on political factors embodied in institutions: institutions, which were contrived locally and at widely varying levels of economic development.

We consider 35 European countries, divided into three groups[2] as follows: advanced Europe, accession countries (the first wave) and EU candidate countries. The focus on European countries stems from increased regionalisation trends in Europe as a whole since the fall of the Berlin wall. By employing a cross-comparative approach, we seek to examine differences in the performance of conventional macroeconomic factors as well as political/institutional risk factors affecting FDI decisions. Such a comprehensive discussion has been largely ignored in the context of cross-sectionally compared countries.

We focus primarily on behavioural patterns related to *a priori* perceptions regarding the relationship of risk and FDI, and thus our concern is with the revealed FDI allocations in Europe. As our results suggest, risk is not always negatively associated with the FDI decision-making and the conflicting results across the various studies very much depend on the definition of risk which is adopted. Interestingly, this paper highlights both differences and similarities among countries that do not share the same history, culture and level of economic development (Europen Bank for Reconstruction and Development (EBRD), 1994). Moreover, it reveals that noneconomic factors are important but not easily quantifiable contributors to economic decision-making.

The contributions of this paper include the following:

- We review the literature on the determining factors of FDI from the point of view of host institutions, whose importance is stressed by evolutionary economics (Seyoum, 2011) and business literature, to set up our empirically testable hypotheses.
- Our tests concentrate on FDI stocks rather than on the more traditional empirical testing of FDI flows.
- We estimate the revealed preferences of investors as to 'where to invest' in discriminating between countries in a given moment, and their other decision-making concerning 'how much to invest' in a period of time, in both of which the imperativeness of institutional and economic factors acts differently.
- Because the above information is built in the panel data, it allows us to apply a parallel cross section and time series analysis, which is a novelty in these tests.
- By using alternative robust estimators of coefficients, we assess the measure of instability in our models.

[2] Our groups are based more on institutional similarities than geography. Due to data limitations, we created a group called advanced Europe: 15 countries akin to the European Economic Area. The group of central and eastern European countries (CEECs) was split into nine accession_1 countries and eleven EU candidate countries.

Section 2 briefly discusses the determinants of FDI; Section 3 explores the potential connection that may exist between political risk and FDI; Section 4 discusses the model specification and methodology; Section 5 focuses on estimation results and simulations of robustness, respectively; Section 6 concludes.

2. WHAT DETERMINES THE INFLOW OF FDI?

The underlying reason for FDI is the entrepreneurial expectation of a higher yield of capital conceived as opportunity costs. However, such expectations are directly unobservable factors of decision-making. Thus, there have been numerous attempts to find theoretical causes that correlate with entrepreneurial decisions. Beginning with Caves (1982), economists have concerned themselves with underlying reasons for the emergence of multinational corporations. Following the ownership, locational and internationalisation (OLI) paradigm developed by Dunning (1981), a plethora of literature attempts to model the empirically observable determinants of FDI. The vast majority of the existing literature examines the influence of general economic phenomena, in spite of the inclusion of 'political stability' in the OLI framework. This is primarily due to the fact that economic phenomena are easily quantifiable (Habib and Zurawicki, 2002). Since Dunning, other researchers have developed theoretical models to explain decisions regarding FDI. Such models have been broadly classified as 'vertical firms', 'horizontal firms' and 'knowledge–capital models' (Markusen and Maskus, 1999a, 1999b). In a study of mainly European manufacturing firms, Oberhofer and Pfaffermayr (2010) go beyond current empirical research on firm growth (which deals almost exclusively with independent firms) and formulate an econometric firm growth model that accounts for interdependence within multinational corporate groups. They find positive externalities within vertically organised networks while negative for horizontally organised ones. In particular, in the former case, multinational corporate groups are more stable and adjust faster on average, while in the latter case, externalities lead to heterogeneity in the firm growth processes within the network and slower average size adjustment. Hence, the speed of adjustment of subsidiaries of international corporations differs from independent stand-alone firms.

Much existing literature attributes FDI flows to the following key factors:

Labour costs – Many studies agree that abundant and cheap labour attracts FDI to a particular host economy. Using a panel data set of bilateral flows of FDI from Western countries to CEECs, Bevan and Estrin (2004) find the coefficient on labour costs to be negative and significant. They report greater FDI flows to locations with relatively lower unit labour costs, independent of distance or host country size. This is compatible with the Heckscher–Ohlin paradigm of comparative advantage: specialisation in labour-intensive production is intensified in countries with higher relative labour per capital endowments, which implies lower wages and higher capital yield.

On the other hand, authors such as Lipsey (1999) indicated that labour costs might have a positive or indeed no significant influence. Thus, there is no consensus on labour-related coefficients, for these depend on type of investment, factor mix endowments, and level of development of the host country. The motivation of foreign investors depends on productivity levels of all factors rather than on absolute labour cost levels alone (Holland et al. 2000). Rather than cheap and abundant labour, availability of innovation capability and of a highly skilled labour force could make economies attractive to FDI. For example, despite being a

high cost economy, Sweden has attracted unprecedented levels of inward investment since joining the EU in 1995. According to Holland et al. (2000), factor costs play a secondary role to market access in terms of explaining inward FDI.

Size of the market and potential of demand growth – As argued by Kobrin (1976), FDI is positively influenced by size (in terms of population or GDP) of the host economy market. Modern trade theories stress the importance of increasing returns to scale, which can be gained by capture of large external markets even at the cost of hiring expensive local labour. Bevan and Estrin (2004) find market size to be a very important determinant of FDI flows to CEECs. Wells and Wint (2000) argue that GDP *per capita*, independent of market size, is a significant complementary explanatory variable of FDI. In summary, market size and growth potential are the major determinants of FDI in the CEECs (European Bank for Reconstruction and Development (EBRD), 1994; Holland et al. 2000).

Tax issues and other incentives – Although a macroeconomic factor with a clear political underpinning, the 'package' of fiscal incentives on offer is also an important determinant of FDI. The package may include factors such as low level of corporation tax and investment subsidies. In the case of Ireland, several commentators (e.g. Görg and Ruane, 1999) have singled out low levels of corporate tax as the principal reason why Ireland has been successful in attracting FDI. Other support structures, which attract FDI, include good 'after-care' service by industrial development agencies and good local physical infrastructure. For the CEECs, investment incentives have not had a significant impact on decisions to invest in the early stages of transition (Holland et al. 2000).

Openness – According to Jun and Singh (1996), export orientation of the host economy (as a measure of openness) can stimulate FDI. Habib and Zurawicki (2002) argue that international orientation is a good indicator of competitiveness and an important determinant with respect to FDI.

Other less mentioned determinants – These include geographical distance (Bevan and Estrin, 2004), strategic links and networking effects (Nohria and Garcia-Pont, 1991) and 'diaspora' effects, in particular duration and strength of diplomatic, cultural and economic ties between the home and potential host country. Greater ties increase understanding between home and host country, which is conducive to FDI (Slaughter, 2003; Barry, 2004). Other factors identified in various studies have included economies of scale, management skills and innovative product technologies (Asiedu, 2002).

3. POLITICAL RISK AND FDI

The literature since the late 1990s focuses increasingly on the notion of political risk and institutions (Seyoum, 2011). In particular, corruption as an indicator of political risk has gained prominence due to increased interaction (driven by globalisation) between less corrupt and more corrupt countries. With the rising power of local bureaucracy and increasing opacity in public administration, the risk of state capture and political interventions can modify competition on already not-so-free markets. Increasing attention to political risks in socio-economic studies is associated with the revival of neo-institutional economics, brought to the fore by problems such as postcommunist transition, globalisation and world financial crises.

We consider five studies essential to the methodology of this research. First, two papers by Alfaro et al. (2008, 2009) demonstrate why so many studies of FDI flows suffer from incomplete specification, omitting mainly the variables of human capital, market imperfections and

institutional failure. They explain why poor countries keep constraining their access to capital by failing mainly in the area of institutional quality relative to advanced countries. Alfaro et al. (2008, p. 22) conclude with a challenge: 'Recent studies emphasise the role of institutions for achieving higher levels of income, but remain silent on the specific mechanisms'.

Second, Holland et al. (2000) reviewed available evidence on the relationship between FDI and factors affecting inflows. It is worth noting that political stability was only one of many contributory factors. Their paper provides the following insights: first, political stability may influence the distribution of investment across countries; and second, location of investments may also be influenced by risk perceptions. Relying on survey and econometric evidence, Holland et al. report that macroeconomic and political stabilisation policies have played an important role in the attraction of FDI to the CEECs. In this paper we extend this kind of research by considering transition economies of two groups, comparing them with advanced countries over the time span 1995–2008 by applying more complex techniques of estimation.

Third, Guerin and Manzocchi (2009) combine economic factors of country size, *per capita* income and privatisation proceeds with institutional variables proxying political regime; this leads to a wide spectrum of inferences, including their conclusion about the two-channelled effect of democracy on FDI. Finally, we had to reconsider our general methodological approach following Jellema and Roland (2011) who deal with comprehensive questions how political, legal and cultural institutions could be related to growth. Their study draws attention to the fact that because this type of empirical testing lacks sufficient theoretical underpinning, it has problems with the choice of robust explanatory variables and gets easily entangled with multicollinearity and cointegration.

The current paper can be considered a follow-up to the above papers. First, we extend their scope by activating an interaction between soft institutional/risk factors and economic factors, assessing their balanced impacts. Second, we compare the importance of these factors in three groups of countries that differ as to their level of economic development; and third, we apply two methods of panel estimation, each possessing a specific economic interpretation related to time and location. We consider the latter to be our most innovative contribution to quantitative analyses in the world context.

a. In Search of a Definition of Political Risk

Originally, political risk was defined as adverse consequences arising from political events (Kobrin, 1979). Howell and Chaddick (1994, p. 71) defined political risk as 'the possibility that political decisions, events or conditions in a country, including those that might be referred to as social, will affect the business environment such that investors will lose money or have a reduced profit margin'. In the 1990s, emerging discourse on the accountability of governments gave rise to a different approach to defining political risk. Drabek and Payne (1999) use a 'nontransparency' variable: a composite indicator of corruption, unstable economic policies, weak property rights protection and defective governance. In the same vein, Wei (2000, p. 307) sees corruption as an important dimension of political risk, defining it as 'poor public governance rather than as bureaucratic corruption narrowly defined'.

There are nearly as many definitions of political risk as there are studies on the issue. In his model of FDI determinants in the CEECs, Altomonte (2000) aims to reconcile various definitions used in the literature. With reference to the political risk attached to transient institutions in the CEECs, he uses two variables to measure (i) the perceived quality of the local institutional framework (a 'subjective index of transition') and (ii) the real extent of the

legislative framework (an 'objective index'). He finds the first variable to be highly significant, whereas the second variable is not. Nevertheless, all studies concur that political risk is seen to affect the value of FDI via changes in future cash flow and investors' expected return.

Corruption of bureaucratic mechanisms in a host country constitutes a special category of political risk. The classical theoretical work on corruption resides with Nye (1967) and Rose-Ackerman (1975). Shleifer and Vishny (1993) distinguished between organised/efficient corruption and disorganised/inefficient corruption. The former implies that payers can decrease transaction costs by means of a relatively well-defined bribe; with the latter, outcomes are uncertain even after a well-defined bribe. In defining corruption, the World Bank highlights the abuse of public power for private benefit (Tanzi, 1998). It can reasonably be stated that theoretical arguments against corruption have both ethical and economic aspects, such as inefficiencies of fettered markets or behaviour of agents trapped in the prisoner's dilemma. Egger and Winner (2006, p. 459) state that, 'From a theoretical perspective, corruption may act as either a grabbing hand or a helping hand for inward FDI'.

In our tests, we examine eleven aspects of political/institutional risk as determinants of FDI in the environment of developed European countries, CEECs and other transition economies. We look at behavioural differences in markets for FDI between countries and institutional factors that explain such differences.

b. Reviewing the Evidence on 'Political Risk' as a Determinant of FDI

Empirically testing political risk as an explanatory variable of FDI is not an easy task. Evidence can be broadly divided into survey versus econometric estimation. In the literature in general, results of econometric studies are mixed. Harms (2002, p. 377) aptly sums up the situation: 'While survey studies regularly show that political risk plays an important role in managers' decisions whether to invest in a particular country, the econometric evidence on political risk and investment flows is much less conclusive'. Schneider and Frey (1985) find that political instability has a negative effect on FDI flows in a large number of developing countries. Using a pooled model of developing countries over the period 1972–93, Singh and Jun (1995) find that political risk and business operating conditions are influential determinants of FDI. Busse and Hefeker (2007) empirically estimate the links between a variety of components of political risk, institutional quality and FDI flows, finding a great many of them significant. Drabek and Payne (1999) report a negative impact of nontransparency on FDI. Looking at the case of 35 developed and emerging countries in the year 2000, Hooper and Kim (2007) used an 'opacity index' and found that higher opacity deters capital inflows, in particular FDI. Breuss et al. (2010) confirmed by using logistic regressions that entry to the EU and access to structural and cohesion funds increased the attractiveness of new EU members as FDI recipients; this can be interpreted as an institutional arrangement that decreases the risk in these countries.

On the other hand, using panel data for 15 Latin American economies (1980–96), Biglaiser and De Rouen (2006) found that the only covariates strongly correlated with the rate of FDI in a given year were the risk of expropriation, domestic financial and trade reform, high government consumption in host countries and reinvestment by MNCs. Wheeler and Mody (1992) fail to find a significant correlation between size of FDI and the host country's composite risk measure, which includes perception of corruption as one dimension. In a pooled analysis of developing countries over the period 1982–95, Li and Resnick (2003) fail to find any statistically significant effect of political stability improvements on FDI inflows, with the exception of regime durability. Sethi et al. (2003) find that political instability did not

influence US FDI flows to 28 countries for 1981–2000. Globerman and Shapiro (2003), in a two-stage analysis of US FDI flows to 43 countries (1994–97), find that an index of political instability and acts of violence do not influence the probability of a country's receiving FDI inflow, but do reduce the amount of FDI inflow.

Some conflicting results on the relationship between political risk and FDI can be resolved by considering the type of FDI (or entry mode) chosen by the firm; this is rarely discussed in the literature. In his study of Swedish investors entering new markets, Zejan (1990) claimed that increased risk in the 1970s led to a positive influence on the propensity to choose takeovers (as a low risk strategy) rather than green field investment as an entry mode. Therefore, information on ownership and control is essential in the exploration of political risk as a factor influencing FDI (Andreosso-O'Callaghan and Bassino, 2006). The results of the econometric studies, although mixed, point towards a positive impact of what could be termed 'a sound political framework' on inward FDI, irrespective of the definition of risk used.

Survey studies indicate that perceived political risk and stability are important considerations in determining FDI (Bass et al. 1977). However, in a survey of German FDI in the CEECs, Wei et al. (2007) conclude that political instability ranks fourth among the determinants of FDI and is very much overshadowed by market access and tax considerations. The importance of the latter was also stressed by Devereux et al. (2002).

The studies mentioned above lead to three major conclusions. First, political risk has not been systematically included in studies on determinants of FDI. Second, where it has been included, effects of its impact are mixed and absent to a wider institutional context for such findings. Third, the method of analysis is not neutral to results: the choice of analytical technique combined with an indiscriminate approach to cross section and time series specifications can result in incompatible economic conclusions. Regarding transition countries in Europe, the evidence is clearer. Because CEECs have experienced drastic change in political regimes since the fall of the Berlin wall, most studies on FDI determinants in CEECs include a proxy for the political risk variable. All survey studies on these economies convey similar results: political risk is a hindrance to FDI. In particular, using EBRD transition indicators, Lankes and Venables (1997) argue that risk increases the likelihood of FDI projects being abandoned.

These results have been substantiated by the econometric work of Holland and Pain (1998), Bevan and Estrin (2004), Frankel et al. (2004). In the latter study, risk has political as well as economic aspects and is found to significantly affect FDI in the case of CEECs during the time period 1992–2000. Given the current paper's focus on European economies (CEECs in particular), Bevan and Estrin's (2004) insights are particularly relevant. Employing a panel data set (1994–2000) of bilateral flows of FDI from Western economies to CEECs, they find the primary influences of FDI to be unit labour costs, gravity factors, market size and proximity. They report that announcements about timetables for admission to the EU increase the levels of FDI to prospective members and diminish the importance of country risk. Nevertheless, it is far from certain that the EU accession is bound to wane the importance of political risk in any of these countries – pointing to a sort of convergence towards investments without nationally differentiated institutional checks and balances.

From the previous analyses three important observations can be inferred. First, the role of political risk has followed an evolution both in terms of concepts (factors) and in intensity. Earlier studies stressed the importance of political events such as abrupt regime change, political conflicts or social disruptions. In contrast, more recent studies emphasise the impacts of

heterogeneous sovereign national policies on attracting FDI. The period of time matters, implying the need for a long time series to capture the impacts of abrupt political changes and the evolution of heterogeneous sovereign national policies on attracting FDI.

Second, this conceptual shift aligns with deepening globalisation and the phenomenon of 'transition' in post-communist countries. With the decrease of perceived political risk (e.g. seizure of assets by a centralised system) and the opening of choices for adopting pro-market policies, the definition of political risk has shifted to embrace 'good governance' issues – a notion that appeared in the 1990s.

Third, the real implementation of policies in CEECs often interfered with market functions. Pro-liberal reforms prior to EU accession often received a setback once the umbrella of *acquis communautaire* could be used for reverting to practices of governance found in command economies. This chronological and conceptual shift in institutions, from pro-market to bureaucratic, needs to be taken into account in many countries. Panel data offer a unique opportunity to combine the cross-country differences with their changing dynamics in time.

4. METHODOLOGY AND MODEL VARIABLES EMPLOYED IN THIS STUDY

We use a panel regression technique that allows us to pool together significant clusters of data in a systematic framework so as to analyse the relationship between FDI drivers and FDI stocks in countries sharing a certain institutional history. Our approach distinguishes between cross-sectional and time series dimensions of the processes reflected in our data. Most of the studies cited in our paper employ a panel data regression to examine the relationship between FDI determinants and the observed investment flows in the countries of interest. It is common to estimate such a relationship by models with fixed or random effects. We have also tested the data for autoregressive processes in the variables, which allowed us to complement the previous static estimation with a dynamic model of generalised method of moments (GMM). The usage of instrumental variables improves the consistency of estimators when endogeneity is present in the model (we have detected this in some of our data). Because the DIFF-GMM technique of estimation (Arellano and Bond, 1991) did not prove suitable for our small samples with inertia in some institutional variables, we have opted for the SYS-GMM (Arellano and Bover, 1995), combining the standard set of equations in first differences with suitably lagged levels as instruments, with an additional set of equations in levels with lagged first differences as instruments. We controlled the validity of additional instruments by Sargan, Hansen and Hausman tests.

Our aim is to explain the factors that could potentially have a shared causal impact on the attraction of FDI in groups of selected European countries in the period 1995–2008. We have experimented first with the annual FDI inflows. Unfortunately, the large negative values of some inflows conflicted with the usage of logarithms in estimations and transformations of such data altered their fundamental properties, causing a bias and loss of efficacy in estimators. Therefore, we selected the annual FDI stocks as our endogenous variable and worked first with the stocks reported by UNCTAD. These statistics are converted to dollars from current market values of FDI positions and therefore subject to pricing volatility, especially when the majority of European FDI is reported in currencies closely related to euros. Nominal exchange rates thus became considerable factors explaining such stocks. However, it is recommended by FDI statisticians to avoid such a fluctuation in FDI stocks by relying for analytical purposes on accrued values of FDI flows at market prices in the time of the FDI acquisition (Duce, 2003). Therefore, we have constructed FDI stocks on the basis of FDI

annual flows. To eliminate the different time span for the FDI accumulation by countries,[3] we considered the accrual of stocks since 1995 only. When compared to the analysis of FDI flows, the analysis of FDI stocks (based on logarithmic transformation) alters slightly both the technical and economic contents of the problem, leading so to a new view on FDI attraction.

Our aim is to explain the general regularities that could potentially be correlated with FDI annual stocks in groups of selected European countries in the period 1995–2008, that is, prior the world financial crisis. The FDI data under investigation were constructed as the accrued value of FDI flows in US$ from the UNCTAD 2011 FDI database. In line with the variables identified in the literature, the traditional macroeconomic determinants of FDI include the following:

GDP per capita (PPP), as a variable that measures the 'wealth' effect that attracts FDI;
Population size, as a measure of market size. *A priori* one would expect that a sufficiently large market size would serve as an attractive factor for investors seeking a higher demand for their products;
Trade openness (as a ratio of trade turnover per GDP), quantifying the potential for enlarging the domestic market by exporting or purchasing inputs abroad;
Telecommunication infrastructure proxy (number of telephones per 1000 of population). Countries with a developed ICT infrastructure would be more attractive;
Labour cost (as an index of growth in labour compensation, with an index of 100 in base-year 2000) meant as a proxy for employment costs behind the value added. We aim to measure whether rising costs of labour are an impediment to FDI attraction.

We have extended the former list by considering eleven potential political risk indicators in order to assess how economic factors of FDI are complemented by institutional and policy factors:[4]

Business (regulation) freedom: the ability to create, operate and close an enterprise quickly and easily. Burdensome, redundant regulatory rules are seen as a harmful barrier to business efficiency.
Trade freedom: a composite measure of the absence of tariff and nontariff barriers that affect imports and exports of goods and services.
Monetary freedom: combines a measure of price stability with an assessment of price controls. Both inflation and price controls distort market activity.
Freedom from government: a score based on the level of all government expenditures – including consumption and transfers – and state-owned enterprises. Ideally, the state will provide only true public goods, without lavish public expenditure. Hence, many developed countries with heavy government spending are assigned the lowest scores.

[3] The majority of transition countries had no FDI stocks in 1990, and many of them started to attract FDI only in the mid-1990s, while developed market economies had already accumulated huge FDI stocks. Such a difference would cause a bias in the cross-sectional analysis between countries with differences in stocks in our initial year of 1995.
[4] The first nine indicators are taken from the Heritage Foundation (2010), thus retaining their names. We have opted to use these instead of World Bank governance indicators because the former demonstrate better coverage for the years 1995–2008 and offer a wider span of indicators that relate to institutional barriers to market performance. To our knowledge, these indices have not yet been used in the context of FDI, risk and policymaking. Our aim was to use these variables as policy instruments, in contrast to economic variables that lack this property.

Fiscal freedom: a measure of the burden of government from the revenue side. It includes both the tax burden in terms of the top tax rate on income (individual and corporate separately) and the overall amount of tax revenue as portion of GDP.
Property rights: an assessment of the ability of individuals to accumulate private property, secured by clear laws that are fully enforced by the state.
Investment freedom: an assessment of the free flow of capital, especially foreign capital.
Financial freedom: a measure of banking security as well as independence from government control. State ownership of banks and other financial institutions is seen as an inefficient burden, and political favouritism has no place in a free capital market.
Freedom from corruption: based on quantitative data that assess the perception of corruption in the business environment, including levels of governmental legal, judicial, and administrative corruption.
Education index: reflecting the endowments of human capital. Its level is strongly influenced by public administration.
Government effectiveness: considered to be the proxy for the organisation of public governance and its positive externalities.

The use of ordinal scale in measurement has become quite common recently in academic studies where researchers seek to quantify qualitative phenomena that differ in ranking (Wei 2005; Addison and Baliamoune-Lutz, 2006). Each of our eleven variables represents a percentage score between 1 and 100, for a particular country and for a specific year. The higher the score, the more freedom (or positive performance) a country experiences within a particular category. It should be highlighted that in our case these indicators are perception based and accepting their potential subjective bias is a risk undertaken by the researchers. The available alternatives are scarce, and dropping institutional variables means risking an omission specification bias. In line with our previous discussion, it can be argued that each of the risk variables outlined above can be viewed as part of a broad political risk component. We nevertheless treat these different components as stand-alone determining variables in a standard FDI equation, which also includes five macroeconomic variables as explained above. A summary of the explanatory variables used and their data sources are provided in Table 1.

After testing the statistical properties of our exogenous variables (e.g. their collinearity or significance in regressions), we have selectively limited the analysis to a final set of those explanatory variables that were statistically relevant for explaining FDI in a given group. Thus, by econometric testing, we have arrived at a list of key factors necessary for inclusion, with the objective of arriving at a robust measure of both economic factors of FDI as well as their associated political risk.

The 35 countries used in this study will be tested for common properties in four different groups: all (a category defined to include all 35 countries), advanced European-15 (i.e. the 13 economically advanced EU incumbent countries, plus Switzerland and Norway), accession-9 (i.e. those countries that joined the EU in May 2004, except Malta) and the EU candidate-11 countries (i.e. the potential candidates as of 2005, including Bulgaria and Romania). A list of the countries is provided in Table 2. The analysis was performed on 14 years of data covering the time span 1995–2008.

The panel data regressions will be estimated separately for the four groups of countries identified above, while taking a logarithmic transformation of variables in cardinal scale (i.e. of FDI and four economic indicators) and leaving the eleven risk variables in ordinal scale without transformation. The assignment to groups was undertaken with a view to historical

TABLE 1
The List of Macroeconomic, Institutional and Risk (Exogenous) Variables Explaining the FDI Stocks Accrued as Accumulated Nominal FDI Inflows in US$

Macroeconomic Variables	*Sources*[a]
GDP *per capita* in PPP [GDP/PC], Population size [POPUL], Trade openness [TRADE/GDP], Telecommunication infrastructure [TELEC], Labour cost [L-COST]	The World Bank, external data statistics on GDP, population and trade, 2010; United Nations, Statistics on labour and earnings, 2010; IMF, WEO Database, 2010
Institutional and Rsk Variables	*Sources*
Business freedom (regulation) index [REGUL], Trade freedom (trade barriers) index [TRADE], Monetary freedom (inflation and price control) index [MONET], Freedom from government (public spending) index [GOVERN], Fiscal freedom (taxation) index [FISCAL], Property rights index [PROP-R], Investment freedom (capital controls) index [INVEST], Financial freedom (private banking security) index [FINANC], Freedom from corruption (perception) index [CORRUPT],	The Heritage Foundation, Database on the Economic Freedoms, 2010
Education Index [EDUC],	United Nations, Human Development Index, 2010
Government (public sector) effectiveness [GVT-EFF]	The World Bank; Kaufmann et al. (2009)

Note:
[a] Where the data were not available for the given year or country, the missing values were constructed from alternative statistics provided from EUROSTAT or domestic statistics bureaux.

TABLE 2
List of Countries Used for This Study, with Breakdown into Groups

Groups	*Countries*
Group 1 (All-35)	Advanced Europe-15 + accession-9 + EU candidates-11
Group 2 (advanced-15)	Austria, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom
Group 3 (accession-9)	Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, Slovenia
Group 4 (EU candidates-11)	Albania, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Macedonia, Moldova, Romania, Serbia, Turkey, Ukraine

paths related to EU institutional alignment, assuming that members of such groups were subject to some institutional similarities formed by compliance with the *acquis communautaire* or the degree of development.

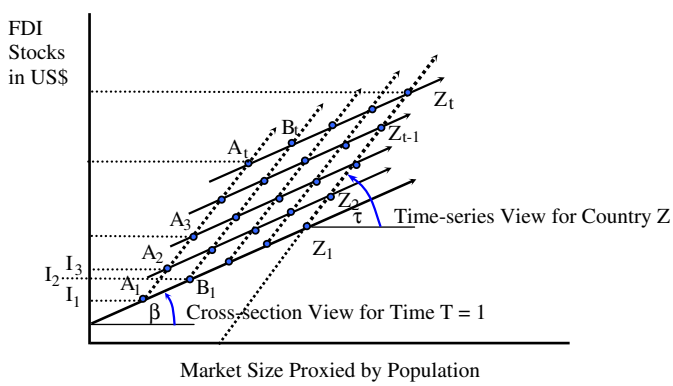
Our first concern before proceeding with regressions was to assess the extent of potential multicollinearity between independent variables. The VIF statistics indicated that in two groups of

countries (all and accession), the GDP *per capita* was too closely cointegrated with some of the remaining variables (TELEC infrastructure and GVT-EFF), pointing also to potential endogeneity in explanatory variables generated by implicit causal links. It is an interesting finding implying that economic underdevelopment is reflected in institutional underdevelopment (and *vice versa*). The interaction between economics and institutions as a sort of circular causality is a form of natural endogeneity of development in the real world. In light of the above, we had no better alternative than to drop some of the nonGDP variables selectively from our model. Since such an operation is not a guarantee that the results are free from multicollinearity or cointegration, we used IV technique as a partial solution to that issue.

The initial cointegration in our data was so great in one case that even after dropping GDP *per capita*, we could presume that this variable was implicitly present by means of its functionally allied 'manifest' variables, which would be theoretically justified. To avoid ambiguity and a plethora of results, we kept only one specification for each type of estimation where the GDP *per capita* was vindicated by the higher explanatory power of that regression, even though it implied a loss of some otherwise significant institutional factors. It should be mentioned we have analysed the revealed locational preferences of foreign investors related to 15 factors. Because we cannot expect that governments adjust their institutional set-up merely in order to attract FDI, it can be assured that, relative to FDI, their policies were exogenous. That implies that outright endogeneity in our 11 institutional variables can be assumed to be sufficiently low.

The next step was the estimation of our four models (for all, advanced, accession and candidate countries) by means of fixed versus random effects. In all regressions, the former was selected by Hausman test, whose values less than 0.001 rejected the random effects technique. Panel data can be identified as a problem to be solved by either cross section or time series analysis. This reflects the problem faced by investors as decision-makers. Financial investors assess the opportunity costs of their investment in various alternative allocations (in this case by countries), ranking their odds in each of them in a static (geographical) way related to accumulated past information. The latter models that situation by panel estimation as a series of cross section segments, as depicted in Figure 1. Each parallel solid line starting from A_1Z_1 up to A_tZ_t represents cross section observations of FDI by country A through Z in given time $T = 1, 2, \ldots t$ relative to market size proxied by population size. Our model estimates

FIGURE 1
Estimation of the Panel Data Based on Cross-Section Versus Time-Series (illustration of linear models)



parameter β that quantifies FDI absorption among countries at different sizes of their markets in a given time. It is a static description of outcomes of past decisions.

However, every experienced investor would claim that this must be combined with 'dynamics', that is, with the evolution over time of the preferential trade-offs between countries, because what ultimately matters are future (expected) yields and the dynamics of market size. The latter points to a panel estimation as time series and the general dependence of FDI on the evolution of market size in individual countries over time. Under such circumstances, we work with data arranged by dashed lines A_1A_t through Z_1Z_t and estimate parameter τ that characterises the growth of FDI as separate markets grow in time. This is crucial information for the real decision-making process. By using parallel static (momentary) and 'dynamic' (evolutionary) estimation, we can reflect the two-stage decision-making process of investors who first decide where to locate their FDI and then how much to invest in time. This is a similar issue to that discussed by Friedman (1957) when he was analysing the structure of consumption and its dynamics.

From a technical point of view, this theoretically well-known complementary dual estimation of panel data[5] offers a unique explanatory insight, even though empirical researchers have seldom considered it explicitly. As we can see, both estimates are necessary because they provide different complementary information about the evolution of FDI in given countries. Quite rarely are coefficients β and τ identical, pointing to unchanging proportionality of FDI to market size among countries and in time. For example, if $\beta = 0.8$, then opening up market B_1 (which is 100 per cent larger than A_1) will attract FDI in I_2, which is larger by 70 per cent than I_1 in market A_1 (due merely to the size factor). However, if the market size of A_1 expands in the next period by 50 per cent to A_2, then its FDI can be expected to double to I_3, implying that it reacts at a higher intensity because its coefficient $\tau = 1.6$. The observation that $\beta < \tau$ implies that we, as external observers, have a dual vision on the impact of market size on FDI: we can see that investors were responding more intensively to the perspective of growing markets than to situations where they considered opportunities by discriminating among countries with different market sizes in a given year. A statistically significant difference in coefficients β and τ signals that a break has been occurring in the past trends in the relationship between related two indicators. For example, country A was catching up in FDI absorption with country Z.

The situation in Figure 1 can be associated with our fixed effects estimates for the group of accession countries where the coefficients for population were 0.858 (cross section) and 6.638 (time series). The estimations imply that (i) investors definitely preferred investing more into large countries (although rather disproportionately less with the market size because the cross section elasticity is less than unity); and (ii) the role of this criterion was increasing over time, most probably by crowding out the importance of other investment criteria (such as the GDP *per capita* or investment control), as there was a gradual rising interest in investing in the given group of countries, as was revealed by the higher time series coefficient of elasticity (6.638).

We can easily imagine a situation where investors discriminate between the size of markets (the cross section lines having a positive slope) but the importance of such behaviour has no

[5] Baltagi (2008) explains the dual nature of panel data in the analysis by two-way in contrast to one-way error component models. By pooling our panel separately across countries and over time, we could then derive two parallel one-way models based on identical identifications but describing different aspects of investment strategies, that is, to groups pooled either by trade-offs in space (static cross section) or by different time trajectories (dynamic time series).

dynamics (the time series lines are flat – thus nonsignificant, as was our observation for candidate countries) or is actually decreasing (the time series coefficient for population is negative and significant, as was found for the group of advanced countries).

In general terms, regarding our methodology of analysis, we could distinguish between the real decision-making processes defined as choices between alternative ventures (subject to cross section data) and their evolution (sustainability) over time. It is a paradox that these two autonomous aspects of every decision-making can lead to coefficients of different magnitude, sign and statistical significance, while being related to the same variable and often within the same theoretical background. It also implies that the analysis of human behaviour subject to alternatives and trade-offs has its natural description in panel data and its inalienable two-pronged parallel views.

5. ESTIMATION RESULTS

In our estimations, we have proceeded gradually, first testing the panel in a cross section specification by means of both fixed and random effects and subsequently estimating it in a time series specification. Results based on the Hausman specification test led us to reject the suitability of random effects in all cases. However, the estimators by these methods may not be free from bias caused by potential endogeneity between our indicators and FDI (pointing to a hidden loop of reversed causality), or when the correlation of some regressors with error terms would be caused by omitted variables or the existence of measurement errors. All our estimates were cross-checked by estimations with instrumental variables, for which we used the dynamic one-step GMM estimation, whose direction of impacts was consistent with previous findings in the majority of cases. Another important observation is that all of our models have a high fit – their *R*-squared (within) rests in the range 0.78–0.95. The results for the estimation of all countries in our panel are presented in Table 3.[6]

All our alternatively estimated coefficients are comparable – we can treat them akin to elasticities. For example, the coefficient of 0.890 for GDP-PC (estimated in logs) implies that a 1 per cent increase in the GDP *per capita* will increase the expected FDI stock by 0.89 per cent. Since 11 institutional variables are not in logs but directly in percentages, their coefficients must be converted to elasticities by antilogs. For example, the coefficient 0.032 for education means that each 1 percentage improvement in the education index will raise the estimated FDI stock by 3.25 per cent because the antilog operation exp(0.032) = 1.0325.

The static cross section type of estimation with fixed effects (marked as All (1)) reveals that three economic indicators are dominant in decisions by investors about the choice of country for their ventures: the GDP *per capita*, market size and labour costs. The latter even with a positive sign, pointing to a compatibility of FDI with rising incomes. The GMM

[6] All our estimators were tested for multicollinearity, which was eliminated in the final specifications. In cases of the presence of heteroscedasticity, White´s corrections for the residual variance were applied. While working with the GMM, we checked that its instruments did not overidentify the model and guaranteed their exogeneity especially in estimations with low number of countries. We first relied on Sargan and Hansen tests, whose p-values were greater than 5 per cent. We complemented these by two Arellano–Bond tests of AR(1) and AR(2), where the former should indicate values below and the latter above 5 per cent. In the choice of instruments, we relied on high differences derived from sufficiently large lags, which our data provided with ease; the number of instruments was not greater than the number of countries.

TABLE 3
Macroeconomic, Institutional and Risk Drivers of FDI – All-35 Countries

Groups of Countries	*All (1)*	*All (2)*	*All (3)*	*All (4)*
Specification	*Cross Section Specification*	*Cross Section Specification*	*Time Series Specification*	*Time Series Specification*
Indicators	*Fixed Effects*	*Dynamic GMM*	*Fixed Effects*	*Dynamic GMM*
GDP-PC	0.890**	0.809**	2.610**	−0.271
Logs	[0.00]	[0.00]	[0.00]	[0.76]
POPUL	0.844**	0.932**	4.627**	0.385
Logs	[0.00]	[0.00]	[0.00]	[0.29]
TRADE/GDP	0.165	0.809**	0.952**	0.353
Logs	[0.11]	[0.00]	[0.00]	[0.20]
TELEC	0.086	0.434**	0.553**	1.081**
Logs	[0.32]	[0.01]	[0.00]	[0.00]
L-COST	0.229**	0.779**	0.340**	1.796**
Logs	[0.00]	[0.00]	[0.00]	[0.01]
REGUL				
TRADE				
MONET			0.006	0.013**
			[0.13]	[0.00]
GOVERN				
FISCAL			−0.011**	−0.121
			[0.00]	[0.12]
PROP-R	0.008**	0.050**		
	[0.00]	[0.00]		
INVEST			0.006*	0.011**
			[0.05]	[0.00]
FINANC	0.013**	−0.001		
	[0.00]	[0.69]		
CORRUPT	0.010**	−0.013		
	[0.00]	[0.11]		
EDUC	0.032**			
	[0.00]			
GVT-EFF	Dropped	Dropped	Dropped	Dropped
(Intercept)	−8.408**	−12.952**	−35.411**	−0.314
	[0.00]	[0.00]	[0.00]	[0.97]
R^2 (within)	0.904		0.824	
GMM:		No. of instr.: 10		No. of instr.: 10
		Predetermined: Prop.-R.		Predetermined: Fiscal
Sargan test		0.176		0.700
Hansen test		0.237		0.291
AB tests – AR		0.006; 0.137		0.028; 0.392
No. of observ.	490	490	490	490
No. of groups	14 years	14 years	35 countries	35 countries

Notes:
(i) Panel data regression results for all 35 countries in period 1995–2008.
(ii) *p*-values of statistical significance of coefficients are in parentheses.
(iii) AB = Arellano–Bond tests for AR1 and AR2 in first differences.
(iv) **, *, imply the significance at the 1% and 5% level, respectively.

estimator of the same model (2), viewed from an IV perspective, even widened the list of significant determining factors to all five economic variables. Even though we can see that economic criteria dominate the formation of FDI stocks, risk indicators are no mere fringe factors – they act as a concomitant institutional underpinning of the former (as well as being the policy instruments). The general importance of property rights is undisputed, and noncorruption, efficiency of financial intermediation and education should be also considered. We could supplement the list with high government efficiency, which we had to exclude due to collinearity with the GDP *per capita*.

The complementary models of decision-makers estimated as a panel succession of time series of 35 countries (see columns 3 and 4) confirmed the permanency and rising positive importance of telecommunications and labour costs only, although fixed effects estimates pointed also to other three economic factors. Institutional risk factors have not shown a wide-spread strong performance. The only strong signal is about the positive importance of proinvestment climate, plus less pronounced importance of monetary stability and tolerance of high government taxation. These time series models possess a rather surprising implication: the institutional situation in destination countries of FDI within Europe does not seem to be crucially important to investors from a long-run perspective. They considered it relevant only from a momentary (cross-sectional) point of view when their decision-making discriminated among countries on grounds of institutions and political risks. There are two explanations: once we excluded the high collinearity of institutional variables with economic ones either within our 14 years time span the institutions in Europe were stagnant, or their association with FDI evolved in a pattern widely differentiated by countries, making the final result statistically insignificant. Therefore, we need an analysis disaggregated by countries to prove which explanation is more probable.

Indeed, one of our objectives was to test whether behavioural and institutional conditions for FDI allocation across countries were homogenous and invariant in time. Here, we can raise a hypothesis that these conditions varied both across countries and time. Thus, we clustered the data according to EU membership history, which was related to the economic and institutional maturity of countries. Table 4 depicts the estimators characteristic of European advanced countries, the majority of them being EU incumbents. The tests show an essential difference in the revealed decisions of investors in this group.

It is worth noting that the disaggregation of the initial set of 35 countries into three subgroups varies the hypotheses tested: the aspect of feasible investment alternatives is constrained by the list of countries in the group. It is assumed that investors have already decided about investing into a particular subgroup of countries (subject to analyses 1 to 4); the problem is to choose the 'correct' country from the shortlisted ones. Thus, we follow the stepwise decision-making of investors who optimise their FDI allocation by considering opportunity costs by eliminating countries from an original much wider set. Our estimates for all four groups of countries have to be taken as complements for deciding about competing locations of an investment venture.

The first apparent change in behaviour of investors to advanced countries is that in models 5 to 8, the dependence of FDI on political risk factors is weaker. FDI in these countries is generally driven by advances in incomes and infrastructure. In the cross-country competition, the market size was an attractor and the decline in its importance in time was rejected by the GMM model. This is complemented by the FDI preference for highly open economies. Except for a distinct finding that deregulation attracted FDI, other institutional factors such as property rights, competent banking, investment liberalisation and good education

TABLE 4
Macroeconomic, Institutional and Risk Drivers of FDI – Advanced-15

Groups of Countries	*Advanced (5)*	*Advanced (6)*	*Advanced (7)*	*Advanced (8)*
Specification	*Cross Section Specification*	*Cross Section Specification*	*Time Series Specification*	*Time Series Specification*
Indicators	*Fixed Effects*	*Dynamic GMM*	*Fixed Effects*	*Dynamic GMM*
GDP-PC	1.422**	1.621**	2.888**	1.0417*
Logs	[0.00]	[0.00]	[0.00]	[0.02]
POPUL	1.067**	0.975**	−4.829**	1.0984**
Logs	[0.00]	[0.00]	[0.00]	[0.00]
TRADE/GDP	1.290**	0.895**	0.106	1.3130**
Logs	[0.00]	[0.00]	[0.86]	[0.00]
TELEC	1.284**	1.193**	2.241**	2.2900**
Logs	[0.00]	[0.00]	[0.00]	[0.00]
L-COST	−0.421	0.447	−0.918	−1.2366
Logs	[0.57]	[0.28]	[0.27]	[0.34]
REGUL	0.022**	0.018**		
	[0.00]	[0.00]		
TRADE				
MONET				
GOVERN				
FISCAL				
PROP-R			0.019**	
			[0.00]	
INVEST	0.006	0.040**		
	[0.19]	[0.00]		
FINANC				0.0079*
				[0.03]
CORRUPT				
EDUC				0.0831**
				[0.00]
GVT-EFF				
(Intercept)	−21.438**	−27.002**	−17.387**	−27.35**
	[0.00]	[0.00]	[0.00]	[0.00]
R^2 (within)	0.782		0.932	
GMM:		No. of instr.: 12		No. of instr.: 9
		Predetermined: Invest		Predetermined: L-Cost
Sargan test		0.065		0.897
Hansen test		0.081		0.836
AB tests – AR		0.005; 0.275		0.012; 0.681
No. of observ.	210	210	210	210
No. of groups	14 years	14 years	15 countries	15 countries

Notes:
(i) Panel data regression results for 15 advanced European countries in 1995–2008.
(ii) *p*-values of statistical significance of coefficients are in parentheses.
(iii) AB = Arellano–Bond tests for AR1 and AR2 in first differences.
(iv) **, *, imply the significance at the 1% and 5% level, respectively.

also matter. The engine of FDI attraction in advanced economies rests in their wealth and infrastructure, whose elasticities in cross section models are above unity, and in addition, their importance is magnified by a general trend pushing their FDI absorption even upward,

as is indicated by cross section elasticities above unity. The tendency to risk neutrality in advanced Europe is explicit, as risk differentials might be considered low and unimportant. These countries achieved a high degree of harmonisation within the EU, which implies uniform changes or institutional inertia.

TABLE 5
Macroeconomic, Institutional and Risk Drivers of FDI – Accession-9

Groups of Countries *Specification* *Indicators*	*Access. (9)* *Cross Section* *Specification* *Fixed Effects*	*Access. (10)* *Cross Section* *Specification* *Dynamic GMM*	*Access. (11)* *Time Series* *Specification* *Fixed Effects*	*Access. (12)* *Time Series* *Specification* *Dynamic GMM*
GDP-PC	0.780**	0.354*	0.412	−1.326
Logs	[0.00]	[0.05]	[0.22]	[0.20]
POPUL	0.858**	0.824**	6.638**	0.915**
Logs	[0.00]	[0.00]	[0.00]	[0.00]
TRADE/GDP	−0.359**	−0.682**	0.554*	0.628
Logs	[0.00]	[0.00]	[0.05]	[0.59]
TELEC	Dropped	Dropped	Dropped	Dropped
Logs				
L-COST	0.266	3.954**	1.598**	2.481**
Logs	[0.28]	[0.00]	[0.00]	[0.00]
REGUL				
TRADE				
MONET	0.014**	0.013*	0.029**	0.042**
	[0.00]	[0.01]	[0.00]	[0.00]
GOVERN	−0.013**	−0.022**		
	[0.00]	[0.00]		
FISCAL				
PROP-R			0.009*	0.037*
			[0.03]	[0.03]
INVEST	0.026**	0.018**		
	[0.00]	[0.008]		
FINANC				
CORRUPT				
EDUC	−0.162**	−0.145**		
	[0.00]	[0.00]		
GVT-EFF	Dropped	Dropped	Dropped	Dropped
(Intercept)	13.438**	2.327	−17.48***	
	[0.00]	[0.27]	[0.00]	
R^2 (within)	0.915		0.937	
GMM:		No. of instr.: 10 Predetermined: L-Cost		No. of instr.: 7 Predetermined: GDP-Pc
Sargan test		0.776		0.843
Hansen test		0.622		0.692
AB tests – AR		0.001; 0.211		0.027; 0.931
No. of observ.	126	126	126	126
No. of groups	14 years	14 years	9 countries	9 countries

Notes:
(i) Panel data regression results for nine accession countries in 1995–2008.
(ii) *p*-values of statistical significance of coefficients are in parentheses.
(iii) AB = Arellano–Bond tests for AR1 and AR2 in first differences.
(iv) **, *, imply the significance at the 1% and 5% level, respectively.

Table 5 with estimates for nine EU first-wave accession countries offers a different picture. GDP *per capita* and market size (proxied by population) in models 9 and 10 are again decisive economic factors with high elasticities. The role of the latter was even rising in strength, as the high coefficients in models 11 and 12 reveal. The preference for larger markets resulted in negative impacts of trade openness on FDI. Potentially ICT infrastructure and government effectiveness could also have a highly positive effect on FDI; however, we had to exclude these variables because of collinearity with the GDP *per capita*. Rising labour costs have not been an impediment to FDI, which can be explained by the fact that they resulted in even higher productivity gains in firms with foreign owners. In contrast to advanced countries, numerous institutional/risk factors emerged that were again more important for the cross-country decision-making. Most essential was a prudent monetary policy combined with sound investment environment and improving property rights over time. Surprisingly, better standards in national education (see models 9 and 10) acted in the opposite way. This paradox can be explained by the comparative advantages in these countries that concentrated in nonhigh-tech manufacturing and in labour-intensive production. In addition, increasing government interventions and spending (e.g. high government procurement) and schemes for FDI promotion, both of which are related to the variable GOVERN, acted also as factors boosting FDI stocks.

The list of significant attractors of FDI in accession countries is nearly evenly spread between economic and institutional factors. In contrast to advanced countries, here the build-up of FDI stocks depends to a large extent on policies. The message from this can be formulated as a maxim: successful transition and sound economy are inter-related with the attraction of FDI by fine-tuning the institutional set-up in a country. Obviously, mixing two behaviourally diverse groups of countries (i.e. advanced and accession) into a common panel data set could not disclose many institutional features which were shared.

The estimates for eleven candidate countries, as shown in Table 6, offer another view where economic fundamentals dominate the attraction of FDI, even though their importance was not confirmed unanimously by all four models. In this group, only Croatia and Bulgaria were able to attract FDI stocks *per capita* at a level comparable with accession countries. In the remaining countries, the drivers of development could be hardly associated with the success in attracting the FDI. Which particular common factors could explain their low FDI absorption? The cross section specification of the panel in columns (13) and (14) assigns the dominant role to market size, plus points to the positive impacts of GDP *per capita*, improving infrastructure and rising wages (L-cost). In contrast to advanced economies, their elasticities are lower than unity (with the exception of infrastructure). Their low initial wealth attracted only low levels of FDI, whose gap was not filled sufficiently by other economic factors backed by reformed institutions. This was the core of their problem.

Effectiveness of governments and education, combined with higher labour costs, are positively associated with FDI. On the other hand, fiscal, investment and corruption burdens do not impede FDI. The panel time series estimations in (15) and (16) do not signal the existence of wide restructuring of the institutional environment. Similarly, like in accession countries, the higher labour cost attracts FDI, but its elasticity is much lower. However, there are partial indications that rising GDP, decline of corruption and improved government effectiveness in candidate countries could accelerate their FDI stocks over time.

One important finding emerges when we compare results for the three groups of countries that the association of institutional factors with the build-up of FDI stocks is much looser than that of economic factors. Investors interpret the state of institutions by comparing countries in a given time of investment. In advanced economies with stable institutions they behave

TABLE 6
Macroeconomic, Institutional and Risk Drivers of FDI – Candidates-11

Groups of Countries	*Candid. (13)*	*Candid. (14)*	*Candid. (15)*	*Candid. (16)*
Specification	*Cross Section Specification*	*Cross Section Specification*	*Time Series Specification*	*Time Series Specification*
Indicators	*Fixed Effects*	*Dynamic GMM*	*Fixed Effects*	*Dynamic GMM*
GDP-PC	0.745**	0.266	3.406**	2.413
Logs	[0.00]	[0.486]	[0.00]	[0.69]
POPUL	0.723**	0.887**	0.462	0.669**
Logs	[0.00]	[0.00]	[0.78]	[0.00]
TRADE/GDP	0.229	−0.430	0.460	0.853
Logs	[0.216]	[0.378]	[0.50]	[0.75]
TELEC	−0.121	1.787**	0.135	−0.173
Logs	[0.44]	[0.00]	[0.44]	[0.95]
L-COST	−0.134	0.916**	0.222*	0.861*
Logs	[0.135]	[0.00]	[0.02]	[0.02]
REGUL				
TRADE				
MONET				
GOVERN	0.010**	0.0008		
	[0.01]	[0.86]		
FISCAL				
PROP-R				
INVEST				
FINANC				
CORRUPT			0.026**	0.005
			[0.00]	[0.88]
EDUC				
GVT-EFF	0.060**	0.011	0.070**	0.017
	[0.00]	[0.275]	[0.00]	[0.61]
(Intercept)	−3.34*	−5.63	−30.59**	−22.62
	[0.05]	[0.08]	[0.00]	[0.63]
R^2 (within)	0.815		0.829	
GMM:		No. of instr.:11		No. of instr.: 9
		Predetermined: L-Cost		Predetermined: GDP-Pc
Sargan test		0.849		0.900
Hansen test		0.137		0.775
AB tests – AR		0.085; 0.560		0.007; 0.900
No. of observ.	154	154	154	154
No. of groups	14 years	14 years	11 countries	11 countries

Notes:
(i) Panel data regression results for eleven EU candidate countries in 1995–2008.
(ii) *p*-values of statistical significance of coefficients are in parentheses.
(iii) AB = Arellano–Bond tests for AR1 and AR2 in first differences.
(iv) **, *, imply the significance at the 1% and 5% level, respectively.

differently than in very dynamic liberal emerging markets, which are relatively poorer. In the former, the state of institutions can be condoned. In the latter (accession group), considering their good perspectives for growth and ongoing progressive reforms, the importance of institutions for discriminating among these countries rises considerably. In the case of remaining emerging market economies (candidates), whose institutional reforms are either slow or

TABLE 7
Macroeconomic, Institutional and Risk Drivers of FDI – Robust Estimation

Groups of Countries	*Advanced (5R)*	*Advanced (7R)*	*Accession (9R)*	*Accession (11R)*	*Candidates (13R)*	*Candidates (15R)*
Specification	*LTS Cross Section Fixed Effects*	*LTS Time Series Fixed Effects*	*LTS Cross Section Fixed Effects*	*LTS Time Sseries Fixed Effects*	*LTS Cross Section Fixed Effects*	*LTS Time Series Fixed Effects*
Indicators						
GDP-PC	1.3235**	2.038**	0.2446	0.5549	1.469**	5.003**
Logs	[0.00]	[0.005]	[0.14]	[0.10]	[0.00]	[0.00]
POPUL	1.209**	−7.041**	1.1894**	6.827**	0.438**	5.736
Logs	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.06]
TRADE/GDP	1.034***	0.7365	0.8153**	0.249	−0.397	0.626
Logs	[0.00]	[0.09]	[0.00]	[0.46]	[0.08]	[0.46]
TELEC	0.919**	2.280**	Dropped	Dropped		
Logs	[0.00]	[0.00]				
L-COST	−0.057	0.2601	1.2760**	1.393**	−0.202*	0.237
Logs	[0.93]	[0.72]	[0.00]	[0.00]	[0.03]	[0.106]
REGUL	0.017**				0.045**	0.021*
	[0.00]				[0.00]	[0.05]
TRADE						−0.021*
						[0.04]
MONET			0.0165**	0.0346**	−0.021**	
			[0.00]	[0.00]	[0.00]	
GOVERN			−0.0098**		−0.006	
			[0.00]		[0.09]	
FISCAL						
PROP-R		0.0070		0.0086		
		[0.37]		[0.09]		
INVEST	0.0056*		0.019**		−0.007*	
	[0.03]		[0.00]		[0.03]	
FINANC						
CORRUPT						
EDUC			−0.0138		0.092**	
			0.555		[0.00]	

TABLE 7 *Continued*

Groups of Countries	*Advanced (5R)*	*Advanced (7R)*	*Accession (9R)*	*Accession (11R)*	*Candidates (13R)*	*Candidates (15R)*
Specification	*LTS Cross Section*	*LTS Time Series*	*LTS Cross Section*	*LTS Time Sseries*	*LTS Cross Section*	*LTS Time Series*
Indicators	*Fixed Effects*	*Fixed Effects*	*Fixed Effects*	*Fixed Effects*	*Fixed Effects*	*Fixed Effects*
GVT-EFF			Dropped	Dropped	0.063** [0.01]	
(Intercept)	−18.129** [0.00]	−11.79** [0.01]	−6.1207 0.092	−16.99 [0.00]	−12.13** [0.00]	−51.72** [0.00]
R^2 (within)	0.941	0.956	0.964	0.941	0.906	0.835
No. of observ.	154	154	98	84	112	112
No. of groups	14 years	11 countries	14 years	6 countries	14 years	8 countries
Excluded countries (outliers)	GRE, ITL, DEM, SWE	GRE, DEM, AUT, FIN	CYP, HUN	CZE, SLK, EST	UKR, BLR, MOL	UKR, BLR, MOL

Notes:
(i) Panel data regression results for advanced, accession and candidate countries in period 1995–2008.
(ii) *p*-values of statistical significance of coefficients are in parentheses.
(iii) **, *, imply the significance at the 1% and 5% level, respectively.

nontransparent, we find that not only does their economic backwardness disqualifies them as preferred FDI targets but the very lack of credibility disqualifies the status of institutions as a viable criterion for investment. This was revealed in our time series analysis where the changes in institutions (for better or worse) were statistically significant in very few cases.

When comparing the estimations by three subgroups with the results for all 35 countries, it is apparent that the institutional (and thus also behavioural) heterogeneity of the studied countries could lead to losses in significance of factors due to mixing subpopulations of observations, which are not subject to theoretically expected homogenous behavioural patterns. Indeed, splitting the full sample into three subgroups led to widely varied patterns of determining factors and their coefficients. Economic institutions are the results of local politics that are also poorly predictable, which impairs their credibility. Our heterogeneity of estimated factors is a natural reflection of such properties. Although institutional factors cannot be raised to a role of hard economic laws of development, we can at least learn more about their perception by decision-makers (e.g. when locating the FDI).

At the end of this section, we will briefly deal with two questions: How robust are our results? And are economic and institutional factors equally prone to change when we exclude some outliers from our groups? We know since the seminal paper by Levine and Renelt (1992) that regressions testing policies are generally quite nonrobust to variations in the set of conditioning variables. Let us therefore test whether a small change in our list of countries changes substantially the significance of coefficients or even unveils previously hidden characteristics causing instability in results. The test of robustness was carried out by the robust version of fixed effects estimation based on the least trimmed squares (LTS) technique (Bramati and Croux, 2004). Before applying this estimator we transformed the data by centring the time series by their median. Testing the group of all 35 countries is superfluous because we know that it is composed of at least three mutually highly heterogeneous subgroups.

The robust results for the group of advanced countries are in Table 7 in columns (5R) and (7R), complementing similarly numbered estimates in previous tables. The LTS procedure searches and eliminates the 'outlier' countries least compatible in their behaviour with estimates for (5) and (7). These are Greece, Italy, Germany and Sweden for cross section and Greece, Germany, Austria and Finland for time series estimators. The results by LTS with fixed effects have undergone a change but in none of the cases in a dramatic way. The original models can be considered sufficiently robust, stressing their explanatory power in economic factors while the role of political factors was confirmed to be of marginal importance.

The LTS estimators for accession countries lead to a similar conclusion about relative stability of estimated characteristics in the time series only (11R), where the exclusion of observations for Czech Republic, Slovakia and Estonia, that is, three countries considered highly successful in their transformation, moved the *R*-squared upward without a marked modification of the structure and the values of coefficients. However, the cross section estimation (9R) varied the view on the behavioural characteristics of investors, once Cyprus and Hungary were withdrawn: the GDP *per capita* ceased to be significant and the trade openness reversed its sign. It is the economic factors that lack robustness, contrary to a common presumption that model instability is caused mainly by policy-related factors (Blonigen and Piger, 2011).

For the candidate countries, after the deletion of observations for Ukraine, Belarus and Moldova as outliers, the results offer a much different view than those previously obtained. In the cross section LTS model (13R), the importance of GDP-PC becomes dominant at the expense of other economic factors. Relevant here are the highly positive impacts of low regulation and education, plus monetary, government taxation and investment bureaucracy, which

paradoxically have a negative sign. In the time series LTS model (15R) (compared to 15), the changes are milder and also the *R*-squared improved only marginally. Summing up these results, we can conclude that the group of candidate countries is the most heterogeneous and our quantitative results are not very representative. Especially the role of institutional factors is rather indeterminate. Thus, we can retain our previous observation that the conflicting results of FE, GMM and LTS estimations point to a low credibility of institutions and policies in the group of candidates. We can presume that there could be cases where even improvements in political risks will not suffice for a breakthrough in the attraction of FDI because investors would not consider them relevant.

6. CONCLUSIONS

This research is based on a comparative approach focused on the build-up of FDI stocks in selected groups of European countries (including accession and EU potential candidate countries). The novelty of our analysis consists mainly in the formulation of an FDI function adopted in this research, which blends five macroeconomic factors with eleven political, governance and institutional risk indicators, and the parallel estimates of behavioural patterns of investors in three subgroups of countries. We test empirically the extent to which foreign firms' decisions to invest in a particular set of countries is influenced by economic as opposed to policy-relevant factors associated with these countries *ceteris paribus*.

The study finds that behavioural patterns differ among European recipients of FDI, depending on their economic and institutional maturity. The estimators for fixed and random effects were complemented with the IV technique of GMM, which is more resistant to endogeneity and cointegration among our explanatory variables. The results estimated across four different groups of countries substantiate the voluminous literature on FDI modelling, which pinpoints the dominant role of economic factors while institutional, policy and risk factors emerge transiently, especially in situations of intensive reforms or structural changes. Thus, the results summarised in Tables 3–6 elaborate on the frequently observable dichotomy between investors' actions and their perceptions. In particular, these results provide a nontraditional examination of the role of risk and policy factors in FDI decisions.

The distinction between the static (cross-country) and complementary time-dependent views on decision-making of investors is another innovative aspect of our analysis, without which the quantitative assessment of investors' decisions would lessen its explanatory capacity. The results of cross section panel estimations (where countries compete for FDI) and time series panel estimations (where investors decide about the growth of FDI) are complementary, reflecting the multicriterial approaches in investors' decisions, thereby enriching the explanatory power of our analysis. In general, the regression outputs exhibit significant behavioural differences between countries grouped by their history in reforms and alignment with the EU. We find that countries under different institutions and diverse economic development differ quite consistently with regard to drivers of FDI attraction and absorption. Visible differences also appear in the statistical significances and even signs of factors across groups. Given that the heterogeneity of behaviour at national level is so pronounced, we cannot rely on the existence of some all-embracing general theory on the interaction between economics and policymaking covering FDI allocation; however, we can still derive some important conclusions at that level.

The most striking differences, in terms of determining factors and statistical significance of risk indicators, can be found in comparing the advanced Europe-15 with the remaining

9 + 11 countries. Indeed, the 'distance' between their economic and institutional development is the largest. We have observed that FDI coming to highly developed countries, with a history of long economic integration and shared institutional set-up, is much less sensitive to political risk factors than FDI to destination countries that are poorer and institutionally heterogeneous. Regarding the latter, investors react to credible and sustainable policies. Lack of transparency calls for substitution by other criteria, and the ensuing uncertainty makes its relevant variable statistically insignificant. In general, the cross section analysis, where investors pick winners across countries within the group, has a longer list of significant factors, especially the institutional factors, than time series. Thus static results describing the competition for FDI among countries in the short run denote that policy considerations have been more relevant for locational decisions than for strategies of long-term FDI attraction. The relevance of the given factor even multiplies when it is at the same time significant with a positive sign in the time series. Such are the cases of monetary stability for accession countries and government effectiveness for candidates.

Nearly all our regressions illustrate the crucial and permanent importance of market size proxied by population size and income proxied by the GDP *per capita* in the FDI attraction. The remaining factors either enhance or diminish their importance as specific complements. Nevertheless, FDI tends to penetrate abroad even where some factors are not intuitively considered favourable for its attraction. FDI is often strongly associated with trade openness, although the link highly varies between country groups. The variable of trade openness was so robust that the parallel institutional variable of trade freedom was found to be always statistically insignificant. Interestingly, whenever labour costs were statistically significant at the 1 per cent level, their sign was positive. The bias of FDI to seek cheap labour, typical for comparative advantages in postcommunist countries in the early 1990s, has lost its importance in the latter period. Surprisingly, the role of good telecommunications mattered strongly for FDI attraction in advanced countries but its role faded in the remaining countries.

With regard to political risk, the most frequent positive and significant relationship was between FDI and price stability, absence of price controls and low inflation (i.e. the 'monetary freedom indicator') and investment policies indicator. Though less frequent, the indicators of low regulation, low corruption, and effective public administration always had a positive sign. This indicates that countries with more transparent and efficient institutions tend to experience higher levels of FDI and prosperity. There is a broadly established consensus as to the fact that institutional failures in these areas tend to disrupt market efficiency; more importantly, such ill-performing policies negatively affect investors' expectations.

Contrary to intuition, we find that many institutional factors in Europe such as high taxation, lavish government spending, low enforcement of property rights, inefficient local financial sector or substandard education do not seem to be universal impediments to FDI. These results are ambiguous, as they vary among groups and their preponderant nonsignificance signals also the differences by countries. Here, our findings are at odds with the survey results reviewed earlier in the paper. While these results might surprise at first, such an outcome could reasonably be attributed to the fact that investors price their investments in the country on the basis of political risk according to the level of stability. This argument is applicable across the entire range of definitions of political risk employed in this paper. Thus, for example, investors might be willing to 'tolerate' an excessive level of taxation or weak protection of property rights if it does not affect the level of stability and *status quo* in the country, allowing investors to receive stable cash flow from their investments and profit from their

market share. Such an outcome could also be attributed to the ongoing globalisation process and its associated increase in capital mobility. The importance of institutional factors lacking credibility can be marginalised by investors, as the high number of statistically insignificant results for candidate countries implicates.

This study points to an important aspect of development, which is associated with the transiency of principles and factors that determine decision-making of international direct investors, which we have attempted to measure. Except for the first two economic factors, which seem to be permanent and dominant, the decisions depend in various degrees on locational, cultural and policy factors. The transiency is related not only to time but also to the changing perceptions of investment opportunities in space (i.e. across countries in given time and stage of development). This brings into focus investors' expectations of risks and potential losses from transaction costs in alternative ventures. A large part of the perceived risk factor is related to the institutional set-up in host countries that is subject to national economic policies, which in reality cannot be completely exogenous to each other and to FDI. Investors can therefore react to a mix of risk factors rather than to each factor separately, so crowding out the significance of institutions by economic factors.

Endogeneity and parameter heterogeneity revealed their presence in our analysis, however, we have tried to minimise their influence. The tests of robustness pointed out that estimators for advanced and accession countries have a reasonable stability and that large differences between groups do not imply a similar heterogeneity inside of groups. The countries analysed in this research are at varying stages of economic and institutional development, which was reflected also by their groupings. From the obtained results we argue that institutions, social governance and political risk are undisputable factors in FDI determination, complementing the economic conditions of investment yields. Even though the former are measured via soft data and their quantification must be taken in broad terms and with caution, we are of the view that models omitting this aspect of FDI would not only be misspecified and subject to higher estimation bias, but also fail to acknowledge the nontrivial policy dependence of the formation of FDI stocks.

SUPPORTING INFORMATION

Additional Supporting Information may be found in the online version of this paper:

Appendix S1. Tables 3–6 in an integrated overview: Economic, institutional and risk drivers of FDI.

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