

Are Foreign Ownership and Good Institutions Substitutes? The European Evidence

Harry Huizinga*

European Commission, Tilburg University and CEPR

and

Cécile Denis*

European Commission

Draft: February 2003

Abstract: This paper examines the determinants of the foreign ownership of European firms between 1996 and 2000. International investors appear to base their preferences on firm characteristics as well as on macroeconomic variables, indices of financial development, the ease of market access and indices of the quality of the legal environment. Foreign ownership falls with GDP and appears to be a complement to international trade. At the same time, foreign ownership is negatively related to financial development and to a range of indices of investor protection such as shareholder rights, the rule of law and a lack of insider trading. Foreign investors may be attracted to countries with a relatively low-quality legal environment, as their foreignness enables them to ‘import’ high quality institutions from their home countries. This provides them with a competitive advantage vis-à-vis domestic firms.

Keywords: foreign ownership, institutional quality

JEL Classification Numbers: F36, G32

* We thank Werner Roeger for many useful discussions and Ramiro Gomez Villalba for technical assistance. The findings, interpretations, and conclusions expressed in this paper are entirely those of the authors. They should not be attributed to the European Commission.

1. Introduction

Europe is largely open to investments from abroad in the form of foreign direct investment (FDI) and portfolio investment. This openness has not led to an outcome where foreign residents own the lion's share of national assets. Instead, only about 26 percent of European equity, as documented by this paper, is foreign-owned. This relatively small foreign ownership share is the mirror image of the well-known 'home bias' in investment portfolios. At least for the world as a whole, the share of foreign equities in investment portfolios has to equal the share of equities that is foreign-owned. The 'home bias' puzzle, however, has so far mostly been considered a portfolio allocation anomaly, without due consideration of how foreign ownership may possibly affect underlying asset returns. If international ownership itself affects the operation of a company, then it is more than a variable in a portfolio manager's optimization problem.

This paper has two purposes. First, it describes the international and time pattern of the foreign ownership of equities in Europe. Reflecting considerable national differences, foreign ownership shares in Western and Eastern Europe are estimated at 19 and 39 percent in 2000, respectively, if weighted by assets. Foreign ownership in Western Europe has been fairly stable during the 1996-2000 period, but it has increased substantially in Eastern Europe. Second, the paper aims to find empirical explanations for the observed variation of foreign ownership across Europe. Kang and Stulz (1997) and Dahlquist and Robertsson (2001) have previously investigated how foreign ownership depends on various firm characteristics for the cases of Japan and Sweden, respectively. Extending this research to an international setting, we also examine what country characteristics may affect the foreign ownership of equity.

Foreign ownership serves a range of purposes, such as risk diversification and the facilitation of international trade, and at the same time it entails specific costs. This suggests that a wide range of variables can in principle explain foreign ownership patterns. These potential determinants of foreign ownership include macroeconomic variables, proxies for financial market development, tax variables, indices of market access for international investors, and indicators of the quality of institutions including (foreign) shareholder protection. The hypotheses that link foreign ownership to these explanatory variables are, in some instances, rather immediate. Wider freedoms for international investors to acquire control of a

company, for instance, should lead to broader foreign ownership, and the paper indeed finds support for this particular hypothesis.

In other instances, the relationship to be expected between foreign ownership and potential explanatory variables is less clear. This is the case for indicators of the quality and efficacy of legal and other institutions (among these are indices of shareholder protection, the quality of accounting standards, and the rule of law). A well-functioning legal system (including effective corporate governance regulation) makes it harder for managers and majority shareholders to disadvantage minority shareholders. This is true for domestically owned and foreign-owned firms. If the main managers and majority shareholders are domestic and minority shareholders are foreign, good institutions help to protect foreign investors from expropriation by domestic agents, and hence could give rise to a higher national foreign ownership share. Reasoning along these lines underlies the ‘natural’ hypothesis that international investors are attracted to countries with good institutions.

The opposite, however, may be true, if foreign-owned firms may to some extent be able to ‘internalize’ the good institutions of their home countries. A foreign owned firm that is part of a larger multinational, for instance, may de facto be subject to some aspects of the law of the home country. This is because the law (including financial market regulations and corporate government codes) can be explicitly or implicitly extraterritorial in a variety of ways. As a result, foreign ownership may enable firms to ‘import’ good institutions into a country that does not have these itself. This may enable foreign-owned firms, for instance, to commit to treat minority shareholders and creditors fairly, thus lowering their cost of capital. Such a commitment provides foreign-owned firms with a competitive advantage vis-à-vis local firms and in equilibrium would give rise to a relatively high foreign ownership share in countries with low-quality institutions. Our empirical results indeed suggest that foreign ownership and good institutions are substitutes rather than complements.

In the remainder, we first provide an overview of previous work on foreign ownership in section 2. We also discuss the small literature on how legal institutions shape ownership structures and in particular affect ownership concentration. In section 3, we describe the foreign ownership data used in this study. Section 4 discusses the empirical results and section 5 concludes.

2. Previous literature

Around the world, formal foreign ownership restrictions have been reduced in recent decades.¹ All the same, investors worldwide continue to hold primarily domestic assets in their investment portfolios. For the European case, evidence of this home bias is provided by Kpate et al. (2000), European Commission (2001), and Mann and Meade (undated). European Commission (2001), for instance, shows that foreign financial assets exceed 25 percent of total financial assets only in 4 EU member states (Belgium, the Netherlands, Spain and the United Kingdom) out of the 12 member states for which data are available.

The home bias is difficult to explain as the equilibrium outcome of a portfolio allocation problem, as this would, for instance, require rather high transactions costs associated with international equity holdings or consistently divergent expectations among domestic and international investors regarding national equity returns (see Lewis (1995) and (1999) for literature surveys on the home bias). One way out of this conundrum is to allow that equities can yield different returns, if owned by domestic and foreign investors. Explanations that take this route effectively relinquish the standard portfolio model where asset returns are independent of ownership (after adjustments for transactions cost and taxes). A focus on foreign ownership is necessary to investigate what types of assets in what countries may yield different returns if they are foreign-owned. Data on foreign ownership, clearly, is indispensable to help formulate and test hypotheses on the investment preference of foreign investors, which presumably reflect their comparative advantages in owning and managing particular national assets.

A few papers have so far investigated the foreign ownership of equities of particular countries. For the case of Japan, Kang and Stulz (1997) find that foreign holdings of Japanese exchange-traded shares are biased towards large firms, firms with low leverage, firms with low unsystematic risk and firms in manufacturing industries.² Controlling for size, these authors further find that firms that export more,

¹ By 1992, all EU member states had lifted all restrictions on short term and long term capital outflows. At the same time, EU member states are required to allow the ownership of domestic assets by residents of other member states (an exception is the Danish restriction on the ownership of some real estate by residents from other member states). EU member states in specific cases still restrict the ownership of domestic assets by non-EU residents. Ownership restrictions of this kind, however, only pertain to a tiny fraction of EU assets and hence can only have a minimal impact on the asset allocation of international portfolios

² Kang and Stulz (1997) find no support for the hypothesis, formulated in Stulz (1981), that foreigners bias their foreign portfolios towards relatively high-risk stocks.

have greater share turnover and have issued ADRs experience greater foreign ownership. Larger firms with considerable exports may be more highly foreign-owned due a wider international recognition. Focusing on Korea, Freund and Djankov (2000) similarly find that foreign investors focus on exchange-listed firms that are fast-growing, large, have low debt and high exports. Dahlquist and Robertsson (2001), finally, examine the foreign ownership of publicly traded Swedish shares. In part corroborating previous results, these authors find that foreigners prefer to invest in large firms, firms paying low dividends, and firms with large cash positions on their balance sheets. Dahlquist and Robertsson (2001) report that foreign investors typically are mutual funds and other institutional investors. The observed investment preferences of foreign investors are attributed to the fact that they are mostly institutional investors. Hence, Dahlquist and Robertsson (2001) find that international equity investments are subject to an institutional investor in addition to a foreign investor bias.

Single-country data may yield information about foreign investor biases based on firm characteristics, but multi-country data are needed to uncover any international biases. Explanations of foreign ownership at the national level are interesting in their own right, and they can provide information pertinent to the home bias puzzle. At the very least, explanations of different national foreign ownership levels should help to explain variation in the home bias of national investment portfolios (as equities that are preferably owned by foreigners can no longer be included in national investment portfolios). In this paper, we investigate the international ownership of firms in 19 European countries over the 1996-2000 period. The firm-level foreign ownership data are taken from the Amadeus database. The data in principle cover firms with and without publicly traded shares. In practice, a full accounting of the nationality of share owners is available for few exchange-traded firms so that our analysis mostly relates to firms without exchange listings. In this respect, the present paper differs from the previous papers on the foreign ownership of exchange-listed firms in a single country.

The overrepresentation of non-traded firms in our analysis does not make it economically less relevant, as the economic weight of non-traded firms is comparable to those with a listing.³ The foreign investor biases for large and highly solvent firms found in the country studies are confirmed in our study, which suggests that foreign

investor preferences for traded and non-traded firms may be similar. All the same, the nature of foreign ownership of traded and non-traded firms is frequently different, and any results on the determinants of the foreign ownership of non-traded firms do not automatically translate to traded firms. Importantly, foreign investments in non-traded may be more active investments implying foreign control, while foreign investments in traded firms are more of a portfolio nature.⁴ Foreign ownership is more likely to imply the effective importation of foreign institutional standards, if there also is foreign control. Thus the benefits of foreign ownership accruing in countries with weak legal institutions may materialize predominantly for the primarily non-traded firms considered in this study.⁵

Foreign ownership is only one way to circumvent some of the disadvantages a weak legal environment. Alternatively, a high concentration of ownership (domestic or foreign) may mitigate some of the problems associated with a weak legal environment, as a highly concentrated ownership reduces the incentive to advantage the main shareholders at the expense of shareholders in general. La Porta et al. (1998) find evidence that the ownership concentration of firms in a sample of 49 countries is negatively related to the quality of accounting standards and shareholder rights.⁶ Claessens, Djankov and Lang (2000), in turn, document the ownership structures for 2980 firms in 9 East Asian countries to conclude that there is a dominance of family control in all countries except Japan, which has fairly good shareholder protection. Individual country studies for 7 European countries, including Germany and Italy, brought together in European Corporate Governance Network (1997), equally provide evidence that corporate ownership patterns reflect the extent of investor protection.⁷

For publicly traded firms, a listing at a foreign exchange may be an alternative way to commit to higher, international disclosure and corporate governance standards.

³ For the Belgium case, Timmermans (2000) estimates that non-listed firms represent 56 percent of the value of all equity.

⁴ Foreign control is frequently assumed in the case of FDI. Existing studies on the determinants of FDI tend to focus on the volume or direction of FDI rather than on ownership. A recent example is the study by Devereux and Griffith (1998) on how taxation affects the location of FDI from the US in several European countries.

⁵ To check this, it is necessary to have international data on foreign portfolio investments to carry out a study similar to the present one. Aggregated data on the international ownership of listed shares for about 40 countries in 1997 is available from IMF (1999). Using this data, Yildirim (2003) finds no significant relationship between aggregate foreign investments in a country and corporate governance indices.

⁶ See La Porta et al. (2000) for a survey of the literature on how investor protection and corporate governance affect ownership concentration and a range of other financial market phenomena.

If so, a foreign listing should increase corporate valuations, and indeed Doidge, Karolyi and Stulz (2001) find that foreign companies listed in the U.S. have a Tobin's q that exceeds by 16.5 percent the q ratio of firms from the same country not listed in the U.S..⁸ Controlling shareholders, however, may not benefit from a listing in the U.S., if this reduces the effectiveness with which they can expropriate minority shareholders. Hence, exchanges with stringent disclosure and corporate governance standards may not actually be more attractive to prospective foreign listing firms. Saudaragan and Biddle (1992), in fact, find that stringent disclosure requirements deter the listing of foreign companies. Pagano, Randl, Roëll and Zechner (2001), finally, find that firms are more likely to cross-list in countries with better investor protection and more efficient courts and bureaucracy, but not with more stringent accounting standards.

3. The data

The firm-level data used in this study is taken from the Amadeus database compiled by Van Dijk. This data source provides regular accounting data on European firms as well as information on main shareholders, including their nationality. Van Dijk gathers the ownership information from a variety of sources such as company reports, official bodies or information providers such as auditing companies and national statistical offices ((see the Appendix for further details on Amadeus). We consider the time period from 1996 to 2000. From Amadeus, we can obtain full information on the nationality of stock ownership for about 14,000 firms in the year 2000. For each firm, shareholders are divided into domestic and foreign shareholders. We use FS to denote the share of equity in percent that is foreign-owned.

Using this firm-level information, we can construct average national foreign-ownership shares as reported in Table 1. Specifically, the table provides the equal-weighted and asset-weighted national foreign ownership shares for the year 2000, and also yearly averages of these foreign ownership shares for the years 1996-2000. In 2000, the asset-weighted foreign ownership share in Europe stands at 25.9 percent. The asset-weighted foreign ownership in the EU and in Western Europe (the EU plus

⁷ Faccio and Lang (2002) examine in detail the ownership and control of 5,232 corporations in 13 Western European countries without relating these to the legal environment.

Iceland, Norway and Switzerland) are 18.8 and 19.2 percent, respectively, in 2000, much lower than the foreign ownership share of 39.2 percent in Eastern Europe.⁹ We also see that the average foreign ownership share for the 1996-2000 period is higher (lower) in Western Europe (Eastern Europe) than in 2000. Trends in foreign ownership in Europe during the 1996-2000 period are represented in Figure 1. We see that foreign-ownership in Europe as a whole has increased slightly during the 1996-2000 period. This overall increase reflects a slight decline in foreign ownership in Western Europe along with a substantial increase in Eastern Europe.

Foreign ownership varies considerably across economic sectors as seen in Table 2. The table again reports the equal-weighted and asset-weighted average foreign ownership shares, now per sector. Separate figures are reported for the year 2000 and for the 1996-2000 period. The table shows that financial intermediation, manufacturing, and trade (wholesale and retail) stand out as sectors with foreign ownership shares exceeding 20 percent. Agriculture (and hunting and forestry), construction, fishing, electricity (and gas and water supply), and transport (and storage and communication) instead, are less than one eighth foreign-owned. Sectoral foreign ownership shares in Eastern and Western Europe differ considerably in several instances, as seen in Figure 2. Agriculture, for instance, is far less foreign-owned in Eastern Europe than in Western Europe. This, no doubt, reflects that several Eastern European continue to restrict the foreign ownership of land. In contrast, financial intermediaries in Eastern Europe, with a foreign ownership share of about 60 percent, are far more highly foreign-owned than in Western Europe. Financial intermediation is an industry where an adequate protection of creditors is crucial, and hence international banks may have a competitive advantage over domestic banks, if their foreign origin enables them to ‘import’ a high-level creditor protection.¹⁰

Foreign ownership is more likely to enable a firm to import international standards of corporate behavior, if the foreign owners in fact control the company.

⁸ Analogously, La Porta et al. (2002) find a higher valuation of firms in countries with a better protection of shareholder rights.

⁹ Eurostat (2001) reports on the share of value-added produced by foreign-owned firms in 1998 for Denmark, Spain, the Netherlands, Finland, Sweden and the UK, with an average foreign share of 12.3 percent for these countries. Eurostat only counts majority-owned foreign enterprise (with a single owner or group of owners having more than 50 percent of the shares), which can explain the rather low figure. Data in the Eurostat study reflect selected services industries only.

¹⁰ Foreign banks that are organized as branches tend to fall under the regulation and supervision of the home country. The same may be true for foreign banking subsidiaries that are part of a larger holding

Foreigners are more likely to be in control, if they own 50 percent or more of the stock.¹¹ Hence, it is interesting to see to what extent foreign owner collectively are minority or majority shareholders. To shed light on this, Figure 3 provides information about the frequency distribution of the firm-level foreign ownership shares in Europe as a whole, and also in Western and Eastern Europe separately. From the figure, we see that the vast majority of firms in fact are fully domestically owned. At the other extreme, about a sixth of all firms is fully foreign-owned. Among firms that are partially foreign-owned, relatively many have a foreign ownership share in the 50-52.5 percent bracket to guarantee foreign control. Thus, most firms with any foreign ownership are in fact for 50 percent or more foreign-owned. Firms with partial foreign ownership outside the 50-52.5 percent bracket do exist, but their frequency distribution is hardly noticeable in Figure 3. To picture this, we redraw the overall frequency distribution with a log scale as represented in Figure 4. Ignoring the dominant 0, 50 and 100 percent points, we see that the overall frequency distribution of foreign ownership is relatively flat.

A main interest of this paper is to examine the impact of the legal and regulatory environment on the prevalence of foreign ownership. In this paper, we use a variety of indices of the legal environment from two sources. Two variables, taken from various issues of the World Competitiveness Report, have values that change from year to year. These are IMPROPER (increasing in the propriety of public administration) and INSIDERT (increasing in the scarcity of insider trading); for definitions of these and other variables, see the Appendix. A further five variables, ANTIDR (anti-director rights), ACCSTAN (accounting standards), EFFJS (efficiency of the judicial system), ROL (rule of law), and CORRUPT (corruption) are taken from La Porta et al. (1998). These latter variables do not vary from year to year.

Figure 5 provides simple scatter diagrams plotting each of the legal and institutional quality indices against country-level foreign ownership. All data is averaged for the 1996-2000 period. The IMPROPER and INSIDERT measures are available for several Eastern European countries in addition to most Western European countries. The measures taken from La Porta et al. (1998) are available only

company. Foreign banks alternatively can have a competitive advantage over domestic banks if they use superior banking techniques.

¹¹ Formal foreign control may require less than 50 percent of the shares to be foreign-owned if there are shares with multiple voting rights. Such shares exist, for instance, in Sweden. De facto foreign control may require far less than 50 percent foreign ownership.

for Western Europe. All of the scatter diagrams display a negative relationship between the institutional quality variables and foreign ownership. This is the case for the IMPROPER and INSIDERT scatters including some Eastern European countries, but also for the other scatters containing only Western European countries. Taking the ANTIDR scatter in Part C of the figure as an example, we see that Belgium, Italy and Greece combine relatively weak shareholder protection with high foreign ownership, while the Nordic countries (Denmark, Norway and Sweden) and the United Kingdom display strong shareholder protection and a relatively low foreign ownership.

The scatter diagrams suggest that the univariate relationship between institutional quality and foreign ownership is negative. The institutional quality indices, however, tend to be correlated with other potential determinants of foreign ownership such as GDP per capita. This variable and a range of other control variables are included in the regression analysis reported in section 4. In the remainder of this section, we discuss these various controls and how they may be linked to foreign ownership.

Following Kang and Stulz (1997) and Dahlquist and Robertsson (2001), we include two firm-level variables in the analysis: assets, as an index of firm size, and solvency defined as shareholders' equity as a percent of assets. The expectation, based on the earlier papers, is that both of these variables contribute to a higher foreign ownership.

Several potential macroeconomic determinants of foreign ownership are considered as well. GDP is hypothesized to be negatively related to foreign-ownership, as larger countries should hold a larger share of their own assets, if international assets are held to diversify risk. Second, GDP per capita is negatively related to foreign ownership, if richer countries tend to own the intangible assets that are the basis of much foreign direct investment.¹² On the other hand, richer countries may specialize more in the production of goods that require the inputs of high-level human capital located in several countries – leading to higher foreign ownership in richer countries. Similarly, wealthier countries may more easily overcome any fixed costs associated with buying and selling assets internationally - resulting, for instance, from information barriers. This would also give rise to higher foreign ownership

¹² At least some wealthy countries have strongly positive net foreign asset positions. This could give rise to a negative relationship between GDP per capita and foreign ownership, even if wealthy countries do not disproportionately invest in foreign stocks.

among richer countries. On net, we do not have a clear prior on how per capita GDP will affect foreign ownership. Third, openness, defined as exports plus imports divided by GDP, is positively related to foreign ownership if foreign asset ownership is a complement to trade, while the relationship is negative if foreign ownership and trade are substitutes.

Next, TURN, defined as stock exchange turnover as a percent of stock market capitalization, and SMCAP, defined as stock market capitalization as a percent of GDP, are considered as measures of financial development. Well-developed financial markets make any investment, whether foreign-owned or not, more attractive, as they guarantees workable exit options to investors who want to sell their stakes. More related to foreign ownership, a foreign subsidiary of a multinational firm has privileged access to an internal capital market within the firm. Similarly, foreign owners may have easier direct access to international financial markets (including international banks) on the basis of their international reputation. All this suggests that foreign-owned firms have relatively easy access to capital in countries with low levels of financial development. This could explain a negative relationship between the financial development variables and foreign ownership.

Next, withholding taxes on dividends accruing to foreign residents can be expected to have a negative impact on foreign ownership. The withholding tax variable we consider, WT, is the minimum of withholding taxes on dividends accruing to American, British, German and Japanese (foreign) residents. Finally, we consider three variables that measure the accessibility to foreign investors of the local markets for capital and for control. First, FCONTROL measures the perceived extent to which foreign investors are free to acquire control in a domestic company. Second, LCMARKET reflects whether local capital markets are equally accessible to foreign companies. Finally, CBVENT indicates whether cross-border ventures can be negotiated freely with foreign partners without government restraint.

Summary statistics for all variables are provided in Table 3. These statistics reflect a sample of yearly observations of national data (with the foreign ownership variable FS, and the assets and solvency variables being country-year averages of firm-level data). The assets, GDP and GDP per capita variables are in logs. The values of the qualitative variables, of course, reflect their respective scaling, as discussed in the appendix. It is interesting to note that nonresident dividend

withholding taxes remain economically significant, with a mean value of 10.2 percent and a median of 10 percent.

Simple correlations among the foreign ownership variable and the various explanatory variables are reported in Table 4. Statistically significant correlations are printed in bold face. From the table, we see that the three market access variables (FCONTROL, LCMARKET and CBVENT) are positively and significantly correlated with each other. As expected from the scatter diagrams, we also see that foreign ownership is significantly negatively correlated with each of the institutional quality variables. These institutional variables are also all positively correlated with each other, not least because they in some instances measure overlapping phenomena (for instance, in the case of the IMPROPER and CORRUPT variables). Also, we see that the institutional variables are all positively correlated with GDP per capita, as richer countries tend to have better legal environments.

4. Empirical results

This section reports the results of regressions that relate foreign ownership to the institutional and other variables. A set of basic regressions is presented in Table 5. Columns 1a and 1b have as the dependent variable the equal-weighted foreign ownership share in percent for a country in a particular year. Regression 1a requires each country-level foreign ownership share to be based on at least 10 firm-level observations, while the threshold is 35 observations for regression 1b. In these initial regressions, we include the FCONTROL variable as the single market access indicator in the regression, given that FCONTROL is highly correlated with the other market access variables, LCMARKET and CBVENT (see Table 4). Similarly, we include the IMPROPER variable as the only variable from the group of institutional quality variables. The regressions also include unreported year and industry fixed effects.

The regression in column 1a is based on observations from 19 countries. We see that foreign ownership is significantly positively related to the solvency ratio, to GDP per capita, and to FCONTROL, while it is significantly negatively related to the stock market turnover variable, TURN, and to IMPROPER. These latter results suggest that foreign firms have a comparative advantage in operating in an ‘unfavorable’ market environment characterized by low financial development and a poorly functioning bureaucracy. The requirement that the country-level foreign

ownership average is based on at least 35 observations in a given year reduces the sample to observations from only 16 countries in column 1b. For this smaller sample, we see that foreign ownership is significantly positively related to openness. This suggests that international stock ownership and international trade are complements.

Columns 2a and 2b present regressions with firm-level observations. The included observations, numbering 53,214 and 52,993 respectively, are exactly those on which regressions 1a and 1b are based. Regressions 2a and 2b use weighted least squares where the weight equals the inverse of the number of firm observations for a given country in a given year. With firm-level data, we see that foreign ownership is significantly positively related to assets, as an index of firm size, in both columns 2a and 2b. Further, foreign ownership is negatively related to GDP, positively related to GDP per capita and positively related to openness in regressions 2a and 2b. The market access variable FCONTROL enters both regressions with a positive and significant coefficient, while the IMPROPER variable obtains a negative and significant coefficient.

Next, we introduce an alternative measure of foreign ownership as the dependent variable in columns 3 and 4. This other measure is based on the collective majority ownership by either foreign or domestic investors. Specifically, we define a foreign-owned firm as a firm that is at least 50 percent foreign-owned, while a domestic firm is a firm that is more than 50 percent domestically owned.¹³ Correspondingly, the firm-level dummy variable FD takes on a value of one (hundred percent) if the firm is majority foreign-owned, and of zero if it is majority domestically owned. This approach allows us to use the ownership data of some additional firms for which we cannot identify the nationality of all the equity owners. The dependent variable in column 3, analogous to column 1a, is the country-year average of FD, or the percentage of foreign firms (with majority foreign ownership) for a given country and year. The dependent variable in column 4 is the firm-level dummy FD, analogous to column 2a. The number of firm-level observations now becomes 99,848 in column 4, almost twice the number of 53,214 in column 2a. Unlike previous results, we now see that the coefficient on the stock market capitalization variable is significantly negative in column 3, while the FCONTROL

¹³ Aggregate foreign ownership shares based on this classification are comparable to those reported in Table 1. See Huizinga and Nicodème (2003).

variable has a positive but insignificant coefficient in either regression. The IMPROPER variable is significantly negative only in column 4.

The choice of the market access variable FCONTROL and the institutional variable IMPROPER in the basic regressions of Table 5 is somewhat arbitrary, given that the market access variables and also the institutional variables tend to display high within-group correlations. To consider alternative market access and institutional variables, we next replace FCONTROL by one of the other market access variables or, similarly, we replace IMPROPER by one of the other institutional variables. We do this first for the country-year average regressions 1a and 1b in Table 5. In fact, Panel A of Table 6 first reproduces column 1b of Table 5 (with at least 35 firm level observations for a given country in a given year) in its column 1. Columns 2 and 3 then replace FCONTROL by LCMARKET and CBVENT, respectively. In all three cases, the market access variable is statistically insignificant. Next, we replace IMPROPER by alternative institutional variables in columns 4 through 9. Now we see that the INSIDERT, ANTIDR, ROL and CORRUPT variables all enter the regressions with statistically negative coefficients. In panel B of Table 6, we analogously base regressions that include alternative market access and institutional variables on regression 1a in Table 5 (with at least 10 firm level observations for a given country in a given year). In columns 2 and 3, the IMPROPER variable now continues to have a statistically significant negative coefficient, while other results are largely as in Panel A.

A similar set of regressions, with alternative market access and institutional variables, can be based on regressions 2a and 2b with firm-level observations in Table 5. These are reported in Table 7. Panel A is based on regression 2b in Table 5 (with at least 35 firm level observations for a given country in a given year), while Panel B is based on regression 2a in Table 5 (with at least 10 firm level observations for a given country in a given year). Note that in Panel A the institutional quality variables obtain statistically significant negative coefficients in all cases apart from the ACCSTAN regression.¹⁴ In Panel B, the ACCSTAN variable also enters the regression with a negative and statistically significant coefficient. The turnover variable, TURN,

¹⁴ GDP enters the INSIDERT regression in Panel A of Table 6 with a positive and significant coefficient. This coefficient becomes insignificant if the openness variable is omitted from the regression.

obtains a negative coefficient throughout with some coefficients statistically significant.

Other variables, in particular the stock market capitalization variable, SMCAP, the withholding tax variable, WT, and also GDP per capita obtain coefficients with opposite signs in the different regressions that are statistically significant. Considering columns 1 and 4 through 9, we see that the GDP per capita variable, for example, has a positive and significant coefficient in 3 cases and a negative and significant coefficient in 3 other cases. Thus the estimated sign of the GDP per capita variable differs with the particular institutional variable included in the regression. The institutional variables are all positively correlated with GDP per capita, as seen in Table 4. From that table, we also see that GDP per capita has the lowest and an insignificant correlation with the ANTIDR variable. Note that GDP per capita enters with a negative and significant coefficient in the ANTIDR regression in Panel A of Table 7. GDP per capita similarly enters the regression negatively, if we do not include any of the institutional variables. This suggests that the ‘reduced form’ effect of a higher GDP per capita on foreign ownership is negative, taking into account any indirect impact on institutional quality.¹⁵

Overall the empirical evidence suggests that foreign ownership is negatively related to institutional quality. An explanation is that foreign-owned firms are able to function relatively well in low-quality institutional environments, because they are able to import some of the higher-quality institutional standards of their home countries. Our regression analysis, however, does not shed light on how exactly foreign firms may be able to import relatively high institutional standard. A few potential channels, all the same, can be mentioned. First, foreign owned firms, that are subsidiaries of a multinational firm, may be formally subject to the higher-quality accounting standards of the home country. Second, legal standards, including corporate governance codes, may de facto have an extraterritorial reach in the case of multinational firms. Higher level managers, specifically, may be held accountable in

¹⁵ Note that the coefficient on GDP per capita is positive and significant in the IMPROPER, ROL and CORRUPT regressions. A reduced form coefficient for GDP per capita can be found by replacing the institutional variable in these regressions by the residual obtained from a first-stage regression of the relevant institutional variable on GDP per capita. This yields a coefficient on GDP per capita that is positive and insignificant in the IMPROPER regression and negative and significant in the ROL and CORRUPT regressions (results are not reported). Economic and institutional development, however, are likely to be mutually reinforcing processes, and we conclude that on the basis of our evidence we can determine how foreign ownership is related to GDP per capita.

their home country courts for misdeeds committed anywhere. The U.S., for instance, forbids the bribing by U.S. companies anywhere. Third, international companies may refrain from opportunistic behavior vis-à-vis local capital providers or other business partners in order to protect their worldwide reputations, even where such opportunism would not be illegal.

As a result of all this, foreign-owned companies may be preferred as business partners in countries with weak institutions. Minority shareholders and creditors, specifically, may stand a better chance of being treated fairly by foreign-owned firms than by local firms. This could lead to a lower cost of capital for foreign owned firms. Similarly, workers and business partners may believe that foreign firms apply higher standards of corporate behavior than local firms, which would make international firms the employers and business partners of choice. Wider trust in foreign firms would provide them with a competitive advantage vis-à-vis domestic firms, and could give rise to a larger foreign ownership share at the national level in countries with weak legal institutions.

5. Conclusions

This paper has extended previous research on the determinants of foreign ownership at the firm level to include country characteristics. Macroeconomic variables, indices of foreign market access and indices of institutional quality related to corporate governance and investor protection all seem to matter. Perhaps surprisingly, foreign ownership and good institutions empirically appear to be substitutes. The likely reason is that foreign-owned firms, which are frequently part of a multinational firm, are able to import some of the good institutions of their home countries. This puts foreign-owned firms at a competitive advantage vis-à-vis domestic firms in countries with weak investor protection. If foreigners own relatively many of the assets in countries with poor institutions, then presumably domestic investors in these countries are forced to hold primarily foreign assets as well. A corollary, not tested in this paper, is a relatively small ‘home bias’ in countries with weak institutions.

Corporate reform should aim to make it more difficult for managers and majority shareholders to expropriate minority shareholders (and other stakeholders in the firm). The affected managers and majority shareholders can be expected to oppose corporate governance reform in a closed economy setting, and indeed they tend to

oppose such reform. This paper, however, suggests that there may be an international competitive dimension to corporate governance reform. In particular, foreign-owned firms appear to be able to capture a significant share of the assets, and presumably of overall economic activity, in countries with weak institutions. Thus, domestic firms in such countries may face the risk of extinction or of being taken over by a foreign firm, unless domestic corporate governance standards are increased to a higher international level. If so, this could change the political economy of corporate governance reform in favor of the adoption of more stringent standards. Nationalistic sentiments may also help to enact better investor protection, if the alternative is to accept wholesale foreign ownership and control of the domestic economy.

In the case of direct investment, a high rate of foreign ownership can result from large-scale investments in upstarts by foreigners or through mergers and acquisitions with a dominant foreign partner. In future research, it may be interesting to consider whether the international direction of merger and acquisition activity is indeed affected by international discrepancies in investor protection. The general principle that foreign ownership may serve to import a foreign institutional environment should hold as well for industry-specific rules and regulations not considered in this paper. An industry where regulation and supervision are crucial is the financial sector. Some aspects of banking supervision and regulation, such as deposit insurance, in some instances can have an explicitly extraterritorial impact. As documented in this paper, foreign ownership of the banking industry in Eastern Europe is at present higher than of any other sector. In future work, it may be interesting to look in detail at the banking or any other industry to see whether the international reach of regulation affects international investment patterns.

References

- Adjouet , Kpate, L. Botazzi, A Fischer, R. Hamoui, R. Portes and M. Wickens, 2000, *EMU and Portfolio Adjustment*, CEPR Policy Paper 5.
- Claessens, Stijn, Simeon Djankov, and Larry Lang, 2000, The separation of ownership and control in East Asian Corporations, *Journal of Financial Economics* 58, 81-112
- Dahlquist, Magnus and G ran Robertsson, 2001, Direct foreign ownership, institutional investors, and firm characteristics, *Journal of financial economics* 59, 413-440.
- Devereux, Michael P. and Rachel Griffith, 1998, Taxes and the location of production: evidence from a panel of US multinationals, *Journal of Public Economics* 68, 335-367.
- Doidge, Craig, G. Andrew Karolyi and Ren  M. Stulz, 2001, Why are foreign firms listed in the U.S. worth more?, mimeo, Ohio State University.
- European Commission, 2001, Financial market integration in the EU, Chapter 4 in *EU Economy Review 2001*, Brussels.
- European Corporate Governance Network, 1997, The separation of ownership and control: a survey of 7 European countries, preliminary report to the European Commission
- Eurostat, 2001, *Foreign-owned enterprises*, Statistics in focus, industry, trade and services, Theme 4, No 20.
- Faccio Mara and Larry H. Lang, 2002, The ultimate ownership of Western European corporation, *Journal of Financial Economics* 65, 365-395.
- Freund, Caroline and Simeon Djankov, 2000, Which firms do foreigners buy?, Policy Research Working Paper 2450, World Bank, Washington, D.C..
- Kang, Jun-Koo and Ren  M. Stulz, 1997, Why is there a home bias? An analysis of foreign portfolio equity ownership in Japan, *Journal of Financial Economics* 46, 3-28.
- Huizinga, Harry and Ga tan Nicod me, 2002, Foreign ownership and corporate income taxation: an empirical evaluation, mimeo, European Commission.
- International Monetary Fund, 1999, *Results of the 1997 coordinated portfolio investment survey*, Washington, D.C..
- Mann, Chatherine L. and Ellen M. Meade, Home bias, transactions costs, and prospects for the euro: a more detailed analysis, mimeo, Institute for International Economics, Washington, D.C..

Pagano, Marco, Otto Randl and Ailsa A. Roëll and J. Zechner, 2001, What makes stock exchanges succeed? Evidence from cross-listing decisions, *European Economic Review* 45, 770-782.

La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert W. Vishny, 1998, Law and finance, *Journal of Political Economy* 106, 1113-1155.

La Porta Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, Robert Vishny, 2000, Investor protection and corporate governance, *Journal of Financial Economics*, 3-27.

La Porta Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer and Robert Vishny, 2002, Investor protection and corporate valuation, *Journal of Finance* 57, 1147-1170.

Lewis, K.K., 1995, Puzzles in international financial markets, in Grossman, G.M., Rogoff, K., eds., *Handbooks of international economics*, Vol. III, North-Holland, Amsterdam.

Lewis, K.K., 1999, Trying to explain the home bias in equities and consumption, *Journal of Economic Literature* 37, 571-608.

Saudaragan, S.M. and G.C. Biddle, 1992, Financial disclosure levels and foreign stock exchange listing decisions, *Journal of International Financial Management and Accounting* 4, 106-147.

Stulz, René, 1981, On the effects of barriers to international investment, *Journal of Finance* 36, 923-934.

Timmermans, Thierry, 2000, International diversification of investments in Belgium and its effects on the main Belgium securities markets, in International financial markets and the implications for monetary and financial stability, Conference Papers No. 8, Bank for International Settlements.

Yildirim, Canan, 2002, Institutions, corporate governance and foreign portfolio equity investments in emerging and industrial countries, mimeo, Tilburg University.

Appendix. Variable definitions, data sources and sample construction

Variable definitions and data sources

Name	Definition, incl. unit or scale	Source
FS	Proportion of foreign-owned shares in percent, computed only with full ownership information	AMADEUS
FD	Indicates domestic or domestic majority ownership in percent, set at 100 if at least 50% foreign-owned and at 0 if more than 50% domestically owned	AMADEUS
Assets	Value of total assets in thousands of 1990 €, log transformation	AMADEUS
Solvency	Ratio of shareholders funds to assets in percent	AMADEUS
GDP	GDP in billions of 1990 €, log transformation	AMECO (EC)
GDP per capita	GDP per capita in thousands of 1990 €, log transformation	AMECO (EC),
Openness	(Exports + imports) / GDP	AMECO (EC)
TURN	Ratio of turnover stock exchange to stock market capitalisation in percent; turnover is computed either under the "trading system view", which only counts transactions that pass through the stock exchange trading systems (Greece, Italy, Luxembourg, Austria, Portugal, Finland, Poland and Slovenia), or under a reporting system which includes all on- and off-market transactions	FIBV
SMCAP	Ratio of stock market capitalisation to GDP in percent	FIBV
WT	Minimum of the withholding tax on dividends accruing to UK, US, Japanese or German residents	Publications by PriceWaterhouse Coopers (and its predecessors) and the International Bureau for Fiscal Documentation
FCONTROL	Survey responses to " <i>Foreign investors are free to acquire control in a domestic company</i> ", scale 0-10 with high marks indicating relatively higher freedom of foreign control	World Competitiveness Yearbook
LCMARKET	Survey responses to " <i>Local capital markets are equally accessible to domestic and foreign companies</i> ", scale 0-10 with high marks indicating relatively easier access to foreign companies	World Competitiveness Yearbook
CBVENT	Survey responses to " <i>Cross-border ventures can be negotiated freely</i> ", scale 0-10 with high marks indicating relatively higher freedom of negotiation	World Competitiveness Yearbook
IMPROPER	Survey responses to " <i>Improper practices (such as bribing or corruption) do not prevail in the public sphere</i> ", scale 0-10 with high marks indicating relatively higher scarcity of improper practices.	World Competitiveness Yearbook
INSIDERT	Survey responses to " <i>Insider trading is not common in the stock market</i> ", scale 0-10 with high marks indicating relatively higher scarcity of insider trade	World Competitiveness Yearbook
ANTIDR	Anti-director rights, index ranging from 0 to 6, based on the inclusion of 6 specific shareholder's rights (taken from company law or commercial code)	La Porta et al., 1998
ACCSTAN	Accountancy standards measured as number of 90 potentially important items included in the 1990 annual report of surveyed companies. Produced by International accounting and auditing trends, Center for International Financial Analysis and Research	La Porta et al., 1998
EFFJS	Efficiency of judicial system, assessment produced by the Business International Corp. (average 80-83), scale 0-10, lower scores indicate lower efficiency levels.	La Porta et al., 1998
ROL	Rule of law, monthly assessment produced by the International Country Risk agency (average of April and October from 1982 to 1995), scale 0-10 (original scale 0-6), lower scores indicate lower tradition for law and order	La Porta et al., 1998
CORRUPT	Monthly assessment of the corruption in government produced by the International Country Risk agency's (average of April and October from 1982 to 1995), scale 0-10 (original scale 0-6), lower scores indicate higher levels of corruption	La Porta et al., 1998

(Variable definitions and data sources, continued)

Name	Definition, incl. unit or scale	Source
Industry sectors	NACE classification based on the first 2 digits: 01-02: Agriculture, hunting and forestry 05: Fishing 10-14: Mining and quarrying 15-37: Manufacturing 40-41: Electricity, gas and water supply 45: Construction 50-52: Wholesale and retail trade, ... 55: Hotels and restaurants 60-64: Transport, storage and communication 65-67: Financial intermediation 70-74: Real estate, renting and business activities Other codes are removed from the sample (public sector activities mainly)	AMADEUS

The Amadeus data base

Firm-level data is from the January 2001 version of the AMADEUS ‘Top 200,000’ Database compiled by Bureau Van Dijk Electronic Publishing. This database contains 241,312 entries of financial statements for private and also public firms in 34 European countries. Firms are included if they meet one of three criteria regarding the magnitude of operating revenues, total assets and the number of employees.¹⁶ Van Dijk states that 95% of the companies in each country that meet at least one of the three criteria are included. The 2001 database provides financial accounts for our 1996-2000 sample period. As a rule, bankrupt companies are kept in the database for 5 more years so that the 2001 database includes firms that went bankrupt in the 1996-2000 period. The database provides a NACE rev1 sector code for each firm. Van Dijk makes use of company reports, reports from official bodies, and of data provided by associated information providers such as auditing companies and national statistical offices. The information is checked and supplemented by way of mailings and phone calls to companies and the reading of company website and press reports.

Ownership information for the year 2000 is provided in the January 2001 database. Some information on ownership is available for about 80% of the companies. Ownership data for the years 1996 to 1999 are culled from the January versions of the databases for the years 1997 through 2000. Amadeus provides data on direct owners and in some instances also on ultimate owners. Our ownership variables are based on direct ownership information, as there is little information on how these direct owners may differ from any ultimate owners.¹⁷ Shareholders with the same nationality as the firm are labeled domestic and shareholders with a different nationality are foreign. For many firms, the nationality of some portion of the shareholders remains unknown, because not all shareholders are listed and the nationality of some of the listed shareholders is not provided.

Sample construction

From Amadeus we first selected all entries with some ownership information and excluded double entries (same year, same firm code). This yielded 197 114 entries for the 1996-2000 period. We then excluded entries of firms in primarily public sectors or whose sector is unknown, and entries of firms with consolidated statements to prevent ‘double counting’ of a

¹⁶ For the UK, Germany, France, Italy, Ukraine and the Russian Federation, the inclusion thresholds are €15 million in operating revenues, €30 million in assets, and 150 employees. For other countries, they are €10 million in operating revenues, €20 million in assets and 100 employees.

¹⁷ As we focus on foreign ownership, this distinction would only matter if a direct foreign owner fronted for an ultimate domestic owner, and vice versa.

subsidiary as an entity in itself and as owned by a firm with a consolidated statement. This left a sample of 160 265 entries. We further dropped firms whose financial ratios were unlikely (negative, missing, or above 100% values for the 4 ratio of current liabilities, other liabilities, fixed assets and tax over total assets). Of the remaining 159 210 observations, 64 426 had full information on domestic or foreign ownership (or information on the ownership of 99.5 or more of the shares given rounding errors) to be used to construct the foreign-owned percentage of shares *FS*. For a larger set of 128 366 observations, we could determine that the firm is either in majority foreign owned or domestically owned (binary variable *FD*).¹⁸

For firms where we can trace the nationality of all shareholders, we define *FS* to be the percent of the shares owned by foreign shareholders. Full ownership information may not be necessary to be able to label firms as either foreign or domestic. We consider an alternative classification where a firm is labeled foreign if 50 percent or more of the shares are foreign-owned, while the firm is domestic if more than 50 percent of the shares is domestically owned. This gives us a binary variable *FD*, whose value is 100 percent if the foreign ownership share is 50% or more and 0 if the domestic ownership share is more than 50%. This variable is defined for more firms than the foreign share *FS*, which requires full information on the nationality of all shareholders.

¹⁸ The regression samples are further reduced on account of missing values for variables appearing in the regressions. Information on the number of remaining observations is given in each table after the regression results.

Table 1. Foreign ownership shares in percent per country

Country	2000			Average 1996-2000	
	# firms	Simple average	Asset-weighted average	Simple average	Asset-weighted average
Austria	148	25.8	21.4	29.9	24.0
Belgium	620	29.1	28.0	36.3	39.0
Bosnia	n.a.	n.a.	n.a.	n.a.	n.a.
Bulgaria	418	21.3	18.4	6.8	7.2
Croatia	85	20.1	13.5	20.3	12.5
Czech Rep.	282	39.9	54.6	36.4	50.3
Denmark	916	22.6	22.8	23.9	21.4
Estonia	12	n.a.	n.a.	n.a.	n.a.
Finland	125	21.0	7.4	20.3	8.6
France	2,479	21.9	14.7	20.1	15.4
Germany	553	16.2	14.1	13.1	13.6
Greece	203	39.3	23.3	34.1	24.5
Hungary	64	42.0	86.9	48.5	80.6
Iceland	n.a.	n.a.	n.a.	n.a.	n.a.
Ireland	4	n.a.	n.a.	n.a.	n.a.
Italy	1,369	39.4	29.7	32.1	33.7
Latvia	20	n.a.	n.a.	n.a.	n.a.
Lithuania	32	n.a.	n.a.	n.a.	n.a.
Luxembourg	7	n.a.	n.a.	n.a.	n.a.
Netherlands	473	20.0	43.4	20.4	40.6
Norway	1,535	19.5	24.7	16.3	18.2
Poland	123	33.5	33.2	22.7	16.2
Portugal	112	17.8	18.7	24.2	18.3
Romania	1,424	39.6	31.7	18.6	20.6
Slovak Rep.	2	n.a.	n.a.	n.a.	n.a.
Slovenia	75	45.2	36.4	45.2	36.4
Spain	1,006	13.8	9.5	26.2	21.6
Sweden	1,314	7.4	4.8	10.0	5.2
Switzerland	21	n.a.	n.a.	n.a.	n.a.
United Kingdom	794	13.6	7.1	17.7	12.3
Former Yugoslavia	n.a.	n.a.	n.a.	n.a.	n.a.
Europe	14,216	26.1	25.9	23.9	24.0
European Union	10,123	22.1	18.8	24.2	22.4
Western Europe	11,679	21.9	19.2	23.6	22.1
Eastern Europe	2,537	34.5	39.2	23.5	27.7

Notes. The foreign ownership averages are based on firms for which domestic and foreign ownership are fully known and they are computed only if the number of observations for a country in a specific year is at least 35. The average for 1996-2000 is computed using the available yearly averages. Western Europe is the EU-15 where available plus Iceland, Norway and Switzerland. The indicated number of firms refers to simple averages in 2000.

Table 2. Foreign ownership shares in percent per sector

Sector	2000 average			Average of 1996-2000 averages	
	# firms	Simple average	Asset-weighted average	Simple average	Asset-weighted average
Agriculture, hunting and forestry	137	13.0	12.4	4.58	5.07
Construction	816	14.0	11.7	7.24	6.47
Electricity, gas and water supply	449	4.71	2.84	2.75	2.23
Financial intermediation	461	18.3	15.3	20.7	23.9
Fishing	37	6.76	10.4	5.65	6.94
Hotels and restaurants	206	17.1	33.6	17.6	17.9
Manufacturing	5644	28.9	28.2	24.8	26.3
Mining and quarrying	231	19.5	14.5	16.5	14.5
Real estate, renting and business activities	2 164	14.8	12.8	15.0	14.0
Transport, storage and communication	912	14.0	12.3	13.0	7.79
Wholesale and retail trade	3135	31.1	24.9	30.1	25.7

Notes. The foreign ownership averages are based on firms for which domestic and foreign ownership are fully known. The number of firms refers to the simple averages in 2000. The total number of observations in this table is different from Table 1 mainly because of the non inclusion of firms whose affiliation into industry sectors is unknown.

Table 3. Summary statistics

	Number of observations	Number of countries	Min	Mean	Median	Max	Std deviation
FS	91	21	0.443	23.6	21.9	47	10.3
Assets	89	20	5.97	9.73	10	11.2	1.11
Solvency	91	21	23.1	34.6	32.7	59.2	7.5
GDP	89	20	2.12	5.18	5.06	7.63	1.4
GDP per capita	89	20	0.00694	2.37	2.77	3.38	1.04
Openness	88	20	0.329	0.682	0.587	1.47	0.272
TURN	67	16	29.6	97.3	80.1	304	62.4
SMCAP	87	20	0.09	63.6	47.2	272	57.8
WT	89	20	0	10.2	10	15	5.65
FCONTROL	79	18	2.77	8.35	8.68	9.63	1.08
LCMARKET	79	18	5.66	8.28	8.36	9.39	0.749
CBVENT	78	17	4.72	7.94	8.235	9.29	1.09
IMPROPER	79	18	1	5.5	5.41	9.53	2.42
INSIDERT	79	18	2.91	5.88	5.87	8.87	1.31
ANTIDR	66	14	0	1.85	2	4	1.1
ACCSTAN	66	14	36	64.2	62	83	12.2
EFFJS	66	14	5.5	8.6	9.5	10	1.6
ROL	66	14	6.18	9.07	9.23	10	1.12
CORRUPT	66	14	6.13	8.68	8.93	10	1.23

Notes. The statistics are based on country year averages. Averages corresponding to less than 35 firms are dropped. Assets, GDP and GDP per capita are in logs. Variable definitions and data sources are given in the Appendix.

Table 4. Correlation matrix

	FS	Assets	Solvency	GDP	GDP per cap.	Openness	TURN	SMCAP	WT	FCONTROL	LCMARKET	CBVENT	IMPROPER	INSIDERT	ANTIDR	ACCSTAN	EFFJS	ROL	CORRUPT
FS	1	0.13	-0.17	-0.04	0.07	0.25	-0.24	-0.22	0.16	-0.05	-0.29	-0.15	-0.58	-0.5	-0.52	-0.51	-0.38	-0.34	-0.57
Assets		1	-0.669	0.836	0.856	-0.32	0.213	0.514	-0.14	0.245	0.343	0.318	0.431	0.525	0.061	0.129	0.26	0.232	0.102
Solvency			1	-0.7	-0.82	0.275	-0.07	-0.31	-0.04	-0.52	-0.61	-0.55	-0.38	-0.26	0.416	-0.13	-0.2	-0.24	0.088
GDP				1	0.738	-0.51	0.561	0.411	-0.18	0.271	0.223	0.11	0.206	0.385	-0.11	0.249	0.008	-0.05	-0.1
GDP per cap.					1	-0.26	0.112	0.488	-0.02	0.351	0.678	0.625	0.765	0.634	0.183	0.549	0.841	0.847	0.776
Openness						1	-0.29	-0.04	0.306	0.031	0.035	0.016	-0.08	-0.06	-0.19	-0.09	0.375	0.597	0.374
TURN							1	0.138	-0.13	0.097	0.063	-0.13	-0.02	0.02	0.035	0.212	-0.27	-0.26	-0.13
SMCAP								1	-0.47	0.376	0.446	0.262	0.485	0.463	0.282	0.435	0.348	0.078	0.369
WT									1	-0.18	-0.04	0.069	-0.01	-0.07	-0.13	-0.33	-0.11	0.355	-0.1
FCONTROL										1	0.705	0.691	0.31	0.383	0.008	-0.12	0.221	-0	0.128
LCMARKET											1	0.726	0.632	0.571	0.205	-0.03	0.459	0.403	0.547
CBVENT												1	0.595	0.461	0.152	-0.07	0.428	0.397	0.443
IMPROPER													1	0.753	0.685	0.553	0.76	0.679	0.861
INSIDERT														1	0.357	0.239	0.596	0.623	0.686
ANTIDR															1	0.382	0.38	0.201	0.54
ACCSTAN																1	0.636	0.301	0.574
EFFJS																	1	0.717	0.872
ROL																		1	0.733
CORRUPT																			1

Notes. Correlation coefficients are based on country year averages. Averages corresponding to less than 35 observations have been removed from the sample. Bold indicates a significant correlation coefficient (5% significance level). Assets, GDP and GDP per capita are in logs. Variable definitions and data sources are given in the Appendix.

Table 5. Initial regression results

Methods	(1a)	(1b)	(2a)	(2b)	(3)	(4)
Assets	-0.82 (1.9)	0.28 (3.0)	1.8 ** (0.35)	1.8 ** (0.20)	1.5 (2.3)	1.8 ** (0.39)
Solvency	1.3 ** (0.18)	0.63 (0.46)	7.4 10 ⁻² ** (2.4 10 ⁻²)	1.3 10 ⁻² (1.3 10 ⁻²)	0.62 ** (0.23)	6.7 10 ⁻² ** (2.6 10 ⁻²)
GDP	1.1 (1.5)	1.8 (2.4)	-5.0 ** (0.62)	-3.7 ** (0.40)	0.51 (1.9)	-3.0 ** (0.49)
GDP per cap.	16 ** (2.4)	6.8 (5.3)	8.9 ** (1.4)	6.1 ** (1.1)	5.3 (3.4)	2.9 * (1.2)
Openness	6.9 (5.0)	17 * (7.5)	10 * (4.5)	4.1 * (1.8)	10 (10)	13 ** (4.8)
TURN	-4.2 10 ⁻² * (1.7 10 ⁻²)	-3.4 10 ⁻² (2.9 10 ⁻²)	2.4 10 ⁻³ (6.1 10 ⁻³)	-1.6 10 ⁻³ (4.3 10 ⁻³)	-1.0 10 ⁻² (1.7 10 ⁻²)	-1.5 10 ⁻² * (6.2 10 ⁻³)
SMCAP	-7.4 10 ⁻³ (1.6 10 ⁻²)	-1.7 10 ⁻² (2.4 10 ⁻²)	-2.7 10 ⁻³ (1.4 10 ⁻²)	2.3 10 ⁻³ (9.5 10 ⁻³)	-3.9 10 ⁻² * (2.1 10 ⁻²)	-1.4 10 ⁻² (1.3 10 ⁻²)
WT	0.20 (0.14)	-0.10 (0.22)	-7.1 10 ⁻² (0.12)	7.1 10 ⁻² (5.2 10 ⁻²)	-0.22 (0.18)	-0.15 (0.12)
FCONTROL	2.3 ** (0.67)	1.0 (1.2)	1.8 ** (0.59)	1.1 ** (0.42)	1.6 (1.3)	0.4 (0.60)
IMPROPER	-3.2 ** (0.64)	-1.7 (0.97)	-3.7 ** (0.37)	-3.2 ** (0.23)	0.79 (0.97)	-1.6 ** (0.31)
<i>Adj. R²</i>	<i>0.97</i>	<i>0.96</i>	<i>0.33</i>	<i>0.28</i>	<i>0.94</i>	<i>0.28</i>
<i>Sample size</i>	<i>78</i>	<i>67</i>	<i>53 214</i>	<i>52 993</i>	<i>82</i>	<i>100 792</i>
<i># Country¹⁹</i>	<i>19</i>	<i>16</i>	<i>19</i>	<i>16</i>	<i>19</i>	<i>19</i>
<i>Method</i>	<i>OLS</i>	<i>OLS</i>	<i>WLS</i>	<i>WLS</i>	<i>OLS</i>	<i>WLS</i>
<i>Threshold</i>	<i>10</i>	<i>35</i>	<i>10</i>	<i>35</i>	<i>10</i>	<i>10</i>

Notes. The dependent variable is FS in regressions 1a through 2b and it is FD in regressions 3 and 4. Regressions 1a, 1b and 3 use country-year average data and regressions 2a, 2b and 4 use firm data. Assets, GDP and GDP per capita are in logs. Weighted-least squares takes as the weight the inverse of the number of observations in a country-year cell. Threshold is the minimum number of firm observations in a country in a year for the regression to include these observations. All regressions include unreported year and sector fixed effects. Variable definitions and data sources are given in the Appendix. Heteroscedasticity consistent errors are given in parentheses. * and ** indicate significance at the 5% and 1% level respectively.

¹⁹ The 19 countries in regressions 1a, 2a, 3 and 4 are the 15 EU member states plus Switzerland, Norway, Poland and Slovenia, while the 16 countries in the remaining regressions are 13 EU member states (EU15 without Ireland and Luxembourg) plus Norway, Poland and Slovenia.

Table 6. Alternative market access and institutional quality variables in country regressions

Panel A

	Initial model	Variant LCMARKET	Variant CBVENT	Variant INSIDERT	Variant ANTIDR	Variant ACCSTAN	Variant EFFJS	Variant ROL	Variant CORRUPT
Assets	0.28 (3.0)	2.6 (2.8)	1.5 (3.0)	-0.24 (2.6)	9.05 ** (1.8)	4.1 (3.4)	3.7 (4.2)	5.4 (2.8)	-4.5 * (2.1)
Solvency	0.63 (0.46)	0.27 (0.42)	0.21 (0.50)	0.94 * (0.40)	0.33 (0.37)	-0.59 (0.47)	-0.66 (0.49)	0.17 (0.54)	1.6 ** (0.54)
GDP	1.8 (2.4)	0.38 (2.5)	1.2 (2.5)	4.9 * (2.1)	-2.0 (1.5)	0.51 (2.5)	0.15 (3.1)	0.63 (1.9)	1.3 (1.4)
GDP per cap.	6.8 (5.3)	3.7 (4.4)	1.1 (5.7)	2.1 (3.2)	-2.4 (3.0)	-7.1 (4.8)	-4.6 (8.7)	18 * (7.7)	34 ** (6.0)
Openness	17 * (7.5)	16 * (7.8)	15 (*) (7.8)	20 ** (6.1)	-6.4 (5.2)	23 ** (6.4)	22 ** (6.3)	33 ** (4.0)	18 ** (3.6)
TURN	$-3.4 \cdot 10^{-2}$ ($2.9 \cdot 10^{-2}$)	$-1.6 \cdot 10^{-2}$ ($3.2 \cdot 10^{-2}$)	$-2.0 \cdot 10^{-2}$ ($3.1 \cdot 10^{-2}$)	$-4.7 \cdot 10^{-2}$ ($2.9 \cdot 10^{-2}$)	$-2.5 \cdot 10^{-3}$ ($2.0 \cdot 10^{-2}$)	$1.8 \cdot 10^{-2}$ ($3.3 \cdot 10^{-2}$)	$2.2 \cdot 10^{-2}$ ($3.2 \cdot 10^{-2}$)	$-3.4 \cdot 10^{-2}$ ($3.1 \cdot 10^{-2}$)	$-3.4 \cdot 10^{-2}$ ($2.5 \cdot 10^{-2}$)
SMCAP	$-1.7 \cdot 10^{-2}$ ($2.4 \cdot 10^{-2}$)	$-1.8 \cdot 10^{-3}$ ($2.4 \cdot 10^{-2}$)	$-4.7 \cdot 10^{-3}$ ($2.5 \cdot 10^{-2}$)	$-4.7 \cdot 10^{-3}$ ($2.4 \cdot 10^{-2}$)	$7.9 \cdot 10^{-3}$ ($1.5 \cdot 10^{-2}$)	$-4.7 \cdot 10^{-3}$ ($2.5 \cdot 10^{-2}$)	$-4.6 \cdot 10^{-4}$ ($2.3 \cdot 10^{-2}$)	$9.1 \cdot 10^{-3}$ ($2.1 \cdot 10^{-2}$)	$1.5 \cdot 10^{-2}$ ($1.8 \cdot 10^{-2}$)
WT	-0.10 (0.22)	-0.19 (0.21)	-0.20 (0.21)	-0.11 (0.18)	$1.7 \cdot 10^{-2}$ (0.13)	-0.44 ** (0.16)	-0.46 * (0.21)	0.12 (0.21)	-0.78 ** (0.13)
FCONTROL	1.0 (1.2)	-	-	0.43 (1.1)	6.0 ** (1.1)	5.3 ** (1.8)	5.3 ** (1.6)	2.5 (1.8)	4.6 ** (1.0)
LCMARKET	-	-2.0 (1.9)	-	-	-	-	-	-	-
CBVENT	-	-	0.45 (1.5)	-	-	-	-	-	-
IMPROPER	-1.7 (0.97)	-1.5 (0.94)	-1.5 (0.94)	-	-	-	-	-	-
INSIDERT	-	-	-	-4.0 ** (1.1)	-	-	-	-	-
ANTIDR	-	-	-	-	-7.0 ** (0.89)	-	-	-	-
ACCSTAN	-	-	-	-	-	$7.3 \cdot 10^{-2}$ (0.14)	-	-	-
EFFJS	-	-	-	-	-	-	-0.16 (2.2)	-	-
ROL	-	-	-	-	-	-	-	-11 ** (3.0)	-
CORRUPT	-	-	-	-	-	-	-	-	-17 ** (2.0)
Adj. R ²	0.96	0.96	0.96	0.96	0.98	0.96	0.96	0.97	0.98
Sample size	67	67	66	67	61	61	61	61	61
# Country	16	16	15	16	14	14	14	14	14

Notes. The initial regression in this table corresponds to regression 1b of Table 5 (see notes to this table). Other regressions replace either the FCONTROL or the IMPROPER variable. * and ** indicate significance at the 5% and 1% level, respectively. Heteroscedasticity-consistent errors are given in parentheses.

Panel B

	Initial model	Variant LCMARKET	Variant CBVENT	Variant INSIDERT	Variant ANTIDR	Variant ACCSTAN	Variant EFFJS	Variant ROL	Variant CORRUPT
FCONTROL	2.3 ** (0.67)	-	-	3.9 ** (1.0)	0.84 (1.5)	0.52 (1.5)	5.5 ** (0.83)	2.0 (1.4)	3.0 ** (0.85)
LCMARKET		1.5 (1.0)	-						
CBVENT			0.34 (1.4)						
IMPROPER	-3.2 ** (0.64)	-3.4 ** (0.70)	-3.1 ** (0.70)	-	-	-	-	-	-
INSIDERT				-3.7 ** (0.72)	-	-	-	-	-
ANTIDR					-6.7 ** (0.99)	-	-	-	-
ACCSTAN						9.8 10 ⁻² (0.16)	-	-	-
EFFJS							2.7 (1.8)	-	-
ROL								-8.6 ** (2.5)	-
CORRUPT									-15 ** (1.4)
<i>Adj. R²</i>	0.97	0.96	0.96	0.97	0.95	0.97	0.95	0.96	0.98
<i>Sample size</i>	78	78	76	78	65	67	67	67	67
<i># Country</i>	19	19	18	19	15	16	16	16	16

Notes. The initial regression in this table corresponds to regression 1a of Table 5 (see notes to this table). Other regressions replace either the FCONTROL or the IMPROPER variable. * and ** indicate significance at the 5% and 1% level, respectively. Heteroscedasticity- consistent errors are given in parentheses.

Table 7. Alternative market access and institutional quality variables in firm regressions

Panel A

	Initial model	Variant LCMARKET	Variant CBVENT	Variant INSIDERT	Variant ANTIDR	Variant ACCSTAN	Variant EFFJS	Variant ROL	Variant CORRUPT
Assets	1.8 ** (0.20)	1.9 ** (0.20)	1.7 ** (0.19)	1.8 ** (0.20)	1.8 ** (0.19)	1.7 ** (0.19)	1.7 ** (0.19)	2.0 ** (0.19)	1.6 ** (0.19)
Solvency	$1.3 \cdot 10^{-2}$ ($1.3 \cdot 10^{-2}$)	$1.0 \cdot 10^{-2}$ ($1.3 \cdot 10^{-2}$)	$2.4 \cdot 10^{-3}$ ($1.3 \cdot 10^{-2}$)	$1.0 \cdot 10^{-2}$ ($1.3 \cdot 10^{-2}$)	$4.8 \cdot 10^{-2}$ ** ($1.2 \cdot 10^{-2}$)	$4.3 \cdot 10^{-2}$ ** ($1.2 \cdot 10^{-2}$)	$4.3 \cdot 10^{-2}$ ** ($1.2 \cdot 10^{-2}$)	$4.4 \cdot 10^{-2}$ ** ($1.2 \cdot 10^{-2}$)	$5.0 \cdot 10^{-2}$ ** ($1.2 \cdot 10^{-2}$)
GDP	-3.7 ** (0.40)	-3.6 ** (0.40)	-3.1 ** (0.36)	-0.98 ** (0.31)	-2.2 ** (0.37)	-0.80 * (0.32)	-0.99 ** (0.32)	-1.0 ** (0.30)	-4.4 ** (0.41)
GDP per cap	6.1 ** (1.1)	7.6 ** (1.2)	6.1 ** (1.0)	-1.9 ** (0.73)	-5.1 ** (1.1)	-9.0 ** (1.3)	-3.6 (2.2)	8.3 ** (2.3)	14 ** (2.2)
Openness	4.1 * (1.8)	2.9 (1.8)	-0.16 (1.8)	9.7 ** (1.8)	-1.1 (2.1)	3.4 (2.1)	3.4 (1.9)	18 ** (2.4)	11 ** (1.9)
TURN	$-1.6 \cdot 10^{-3}$ ($4.3 \cdot 10^{-3}$)	$-2.6 \cdot 10^{-3}$ ($4.4 \cdot 10^{-3}$)	$-4.3 \cdot 10^{-3}$ ($4.3 \cdot 10^{-3}$)	$-1.2 \cdot 10^{-2}$ ** ($4.2 \cdot 10^{-3}$)	$-2.7 \cdot 10^{-3}$ ($4.5 \cdot 10^{-3}$)	$-1.7 \cdot 10^{-2}$ ** ($4.4 \cdot 10^{-3}$)	$-2.0 \cdot 10^{-2}$ ** ($4.8 \cdot 10^{-3}$)	$-2.3 \cdot 10^{-2}$ ** ($4.2 \cdot 10^{-3}$)	$1.7 \cdot 10^{-2}$ ** ($4.8 \cdot 10^{-3}$)
SMCAP	$2.3 \cdot 10^{-3}$ ($9.5 \cdot 10^{-3}$)	$1.6 \cdot 10^{-2}$ ($8.9 \cdot 10^{-3}$)	$1.9 \cdot 10^{-2}$ * ($9.0 \cdot 10^{-3}$)	$-4.1 \cdot 10^{-2}$ ** ($8.3 \cdot 10^{-3}$)	$-3.0 \cdot 10^{-2}$ ** ($9.9 \cdot 10^{-3}$)	$-6.0 \cdot 10^{-2}$ ** ($1.2 \cdot 10^{-2}$)	$-4.8 \cdot 10^{-2}$ ** ($1.1 \cdot 10^{-2}$)	$-4.0 \cdot 10^{-2}$ ** ($8.5 \cdot 10^{-3}$)	$-1.3 \cdot 10^{-2}$ ($9.7 \cdot 10^{-3}$)
WT	$7.1 \cdot 10^{-2}$ ($5.2 \cdot 10^{-2}$)	$8.8 \cdot 10^{-2}$ ($5.1 \cdot 10^{-2}$)	0.12 * ($5.2 \cdot 10^{-2}$)	$-6.1 \cdot 10^{-2}$ ($5.1 \cdot 10^{-2}$)	$-5.1 \cdot 10^{-3}$ ($5.1 \cdot 10^{-2}$)	$-3.3 \cdot 10^{-2}$ ($4.9 \cdot 10^{-2}$)	-0.11 * ($5.0 \cdot 10^{-2}$)	0.17 ** ($4.5 \cdot 10^{-2}$)	-0.37 ** ($5.8 \cdot 10^{-2}$)
FCONTROL	1.1 ** (0.42)	-	-	2.2 ** (0.45)	2.4 ** (0.39)	2.7 ** (0.50)	2.7 ** (0.39)	1.6 ** (0.38)	2.7 ** (0.39)
LCMARKET		-0.65 (0.73)	-						
CBVENT			0.74 ($4.4 \cdot 10^{-2}$)						
IMPROPER	-3.2 ** (0.23)	-3.3 ** (0.24)	-3.3 ** (0.23)	-	-	-	-	-	-
INSIDERT				-2.8 ** (0.30)	-	-	-	-	-
ANTIDR					-2.7 ** (0.31)	-	-	-	-
ACCSTAN						$3.4 \cdot 10^{-2}$ ($4.3 \cdot 10^{-2}$)	-	-	-
EFFJS							-1.2 * (0.52)	-	-
ROL								-7.7 ** (0.89)	-
CORRUPT									-7.8 ** (0.55)
Adj. R ²	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28
Sample size	52993	52993	52918	52993	52253	52253	52253	52253	52253
# Country	16	16	15	16	14	14	14	14	14

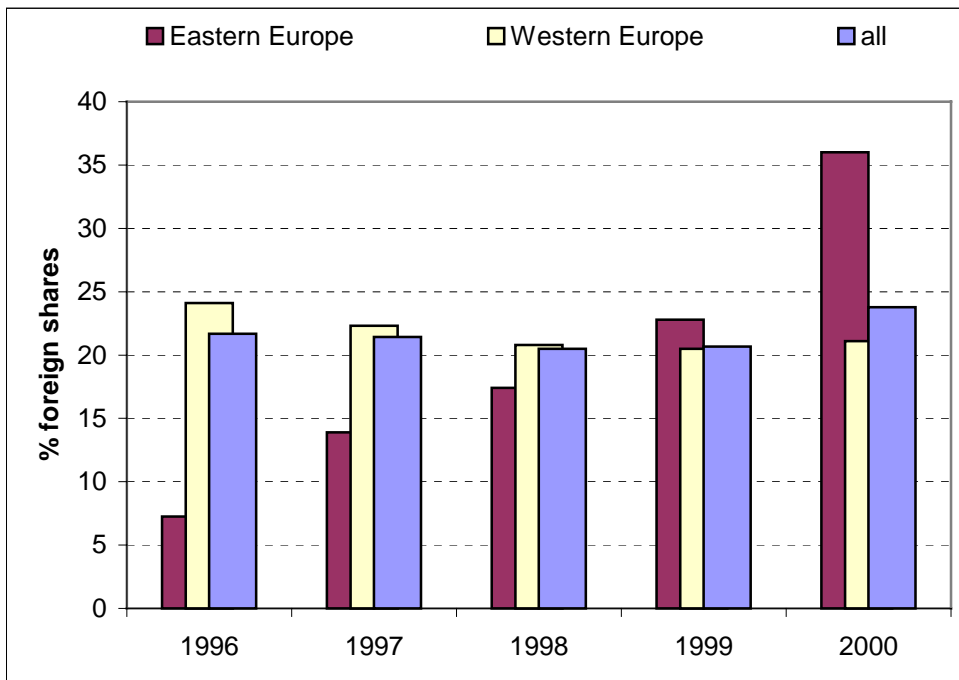
Notes. The initial regression in this table corresponds to regression 2b of Table 5 (see notes to this table). Other regressions replace either the FCONTROL or the IMPROPER variable. * and ** indicate significance at the 5% and 1% level, respectively. Heteroscedasticity-consistent errors are given in parentheses.

Panel B

	Initial model	Variant LCMARKET	Variant CBVENT	Variant INSIDERT	Variant ANTIDR	Variant ACCSTAN	Variant EFFJS	Variant ROL	Variant CORRUPT
FI	1.8 ** (0.59)	-	-	1.8 ** (0.46)	2.5 ** (0.44)	1.2 * (0.48)	2.5 ** (0.44)	1.2 * (0.55)	2.4 ** (0.60)
LCMARKET		0.36 (0.97)	-						
CBVENT			0.55 (0.67)						
IMPROPER	-3.7 ** (0.37)	-3.6 ** (0.37)	-3.7 ** (0.35)	-	-	-	-	-	-
INSIDERT				-3.1 ** (0.36)	-	-	-	-	-
ANTIDR					-2.9 ** (0.38)	-	-	-	-
ACCSTAN						-0.13 ** (5.0 10 ⁻²)	-	-	-
EFFJS							-3.6 ** (0.87)	-	-
ROL								-7.3 ** (1.8)	-
CORRUPT									-8.3 ** (1.2)
<i>Adj. R²</i>	0.33	0.33	0.32	0.28	0.28	0.29	0.29	0.27	0.32
<i>Sample size</i>	53214	53214	53121	52356	52356	52356	52356	52331	53214
<i># Country</i>	19	19	18	16	16	16	16	15	19

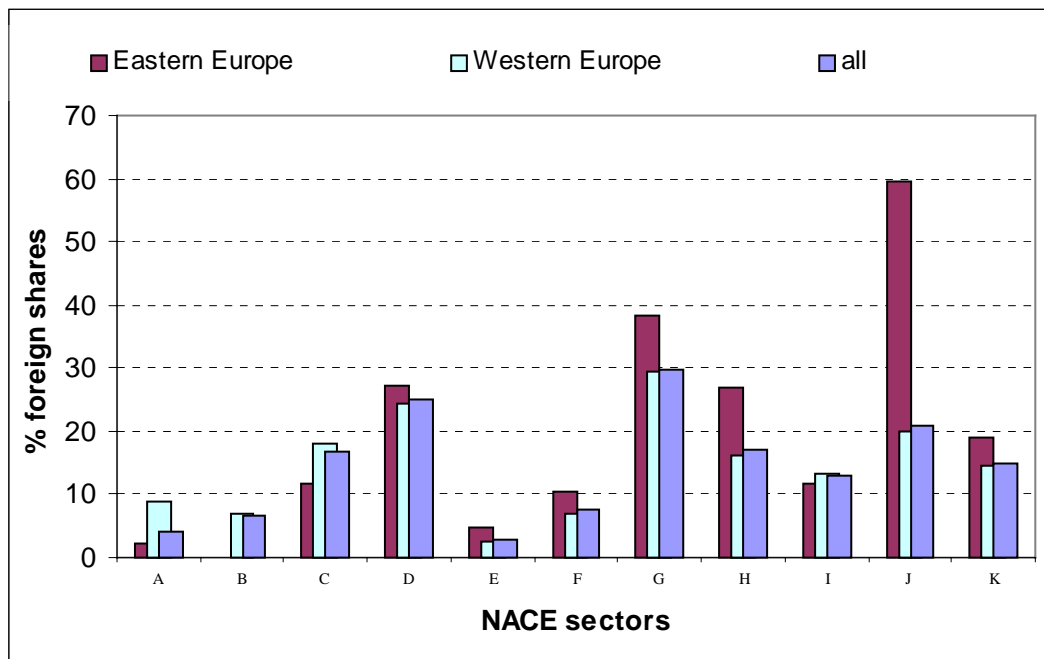
Notes. The initial regression in this table corresponds to regression 1b of Table 5 (see notes to this table). Other regressions replace either the FCONTROL or the IMPROPER variable. * and ** indicates significance at the 5% and 1% level respectively. Heteroskedasticity-consistent errors are given in parentheses.

Figure 1. Evolution of Foreign Ownership in Western and Eastern Europe



Notes. Percentages of foreign-owned shares per year are simple averages of data for all firms for which there is full ownership information. Western Europe is EU15 plus Iceland, Norway and Switzerland.

Figure 2. Foreign Ownership by Sector in Western and Eastern Europe

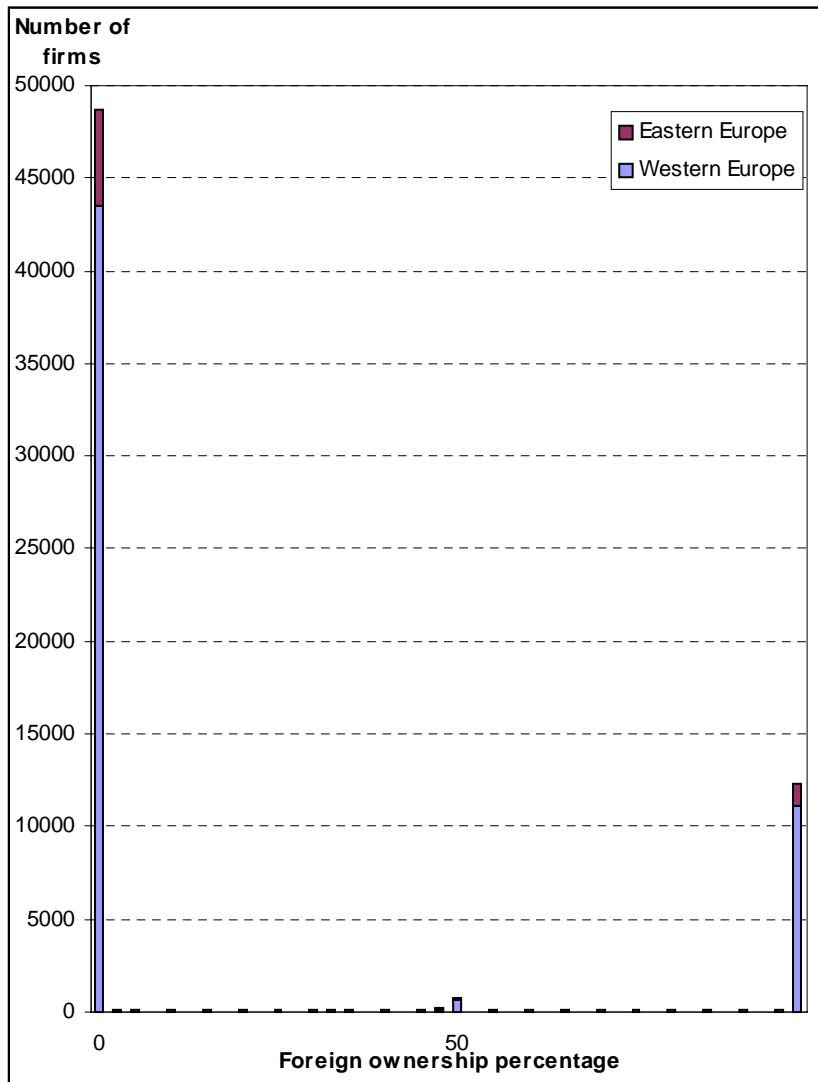


Notes. The sectors are:

- A: Agriculture, hunting and forestry
- B: Fishing
- C: Mining and quarrying
- D: Manufacturing
- E: Electricity, gas and water supply
- F: Construction
- G: Wholesale and retail trade
- H: Hotels and restaurants
- I: Transport, storage and communication
- J: Financial intermediation
- K: Real estate, renting and business activities

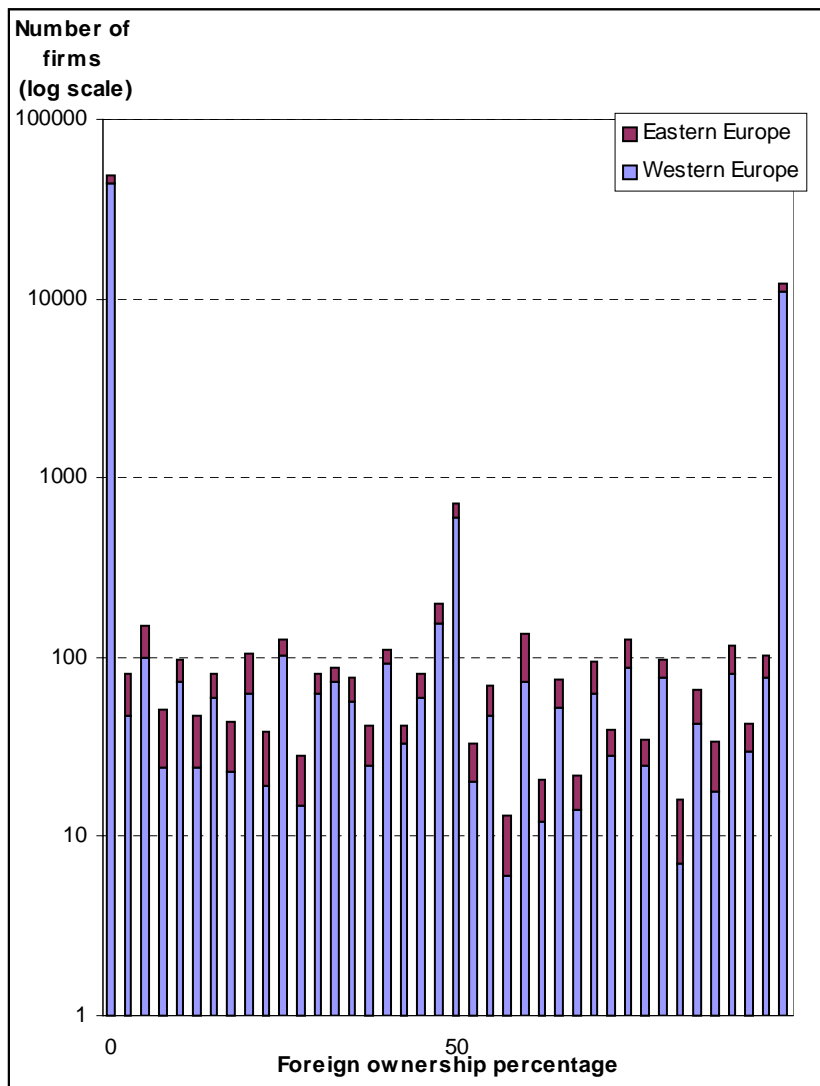
This classification is based on the first 2 digits of the NACE code. Percentages of foreign-owned shares per sector are simple averages of data for all firms for which there is full ownership information. Western Europe is EU15 plus Iceland, Norway and Switzerland. The fishing industry in Eastern Europe is represented by 6 firms (all of which are fully domestically owned).

Figure 3. Distribution of foreign ownership percentage



Notes. Proportion of foreign-owned shares for all firms for which there is full information on share ownership. Europe is EU15 plus Iceland, Norway and Switzerland. Classes are defined as follows: [0-2.5[, [2.5-5.0[, ... [97.5,100].

Figure 4. Distribution of foreign ownership percentage with log scale

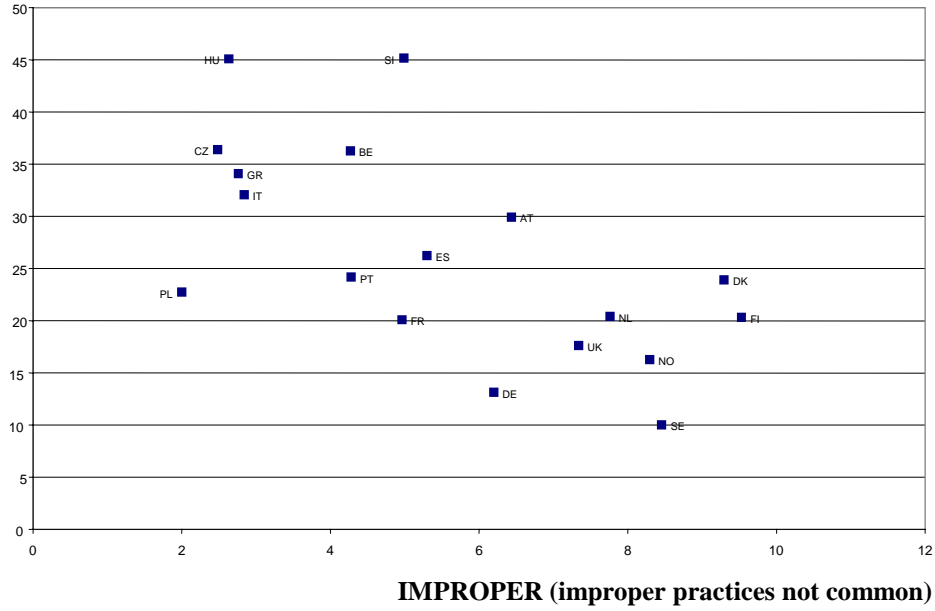


Notes. Proportion of foreign-owned shares for all firms for which there is full information on share ownership. Western Europe is EU15 plus Iceland, Norway and Switzerland. Classes are defined as follows: [0-2.5[, [2.5-5.0[, ... [97.5,100].*

Figure 5. Indices of institutional quality and foreign ownership

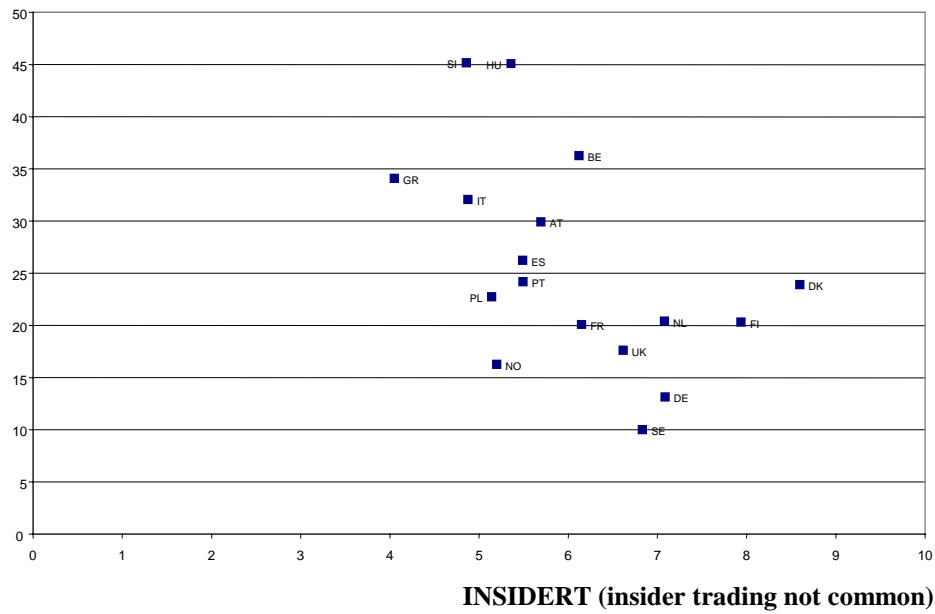
Part A

Foreign ownership



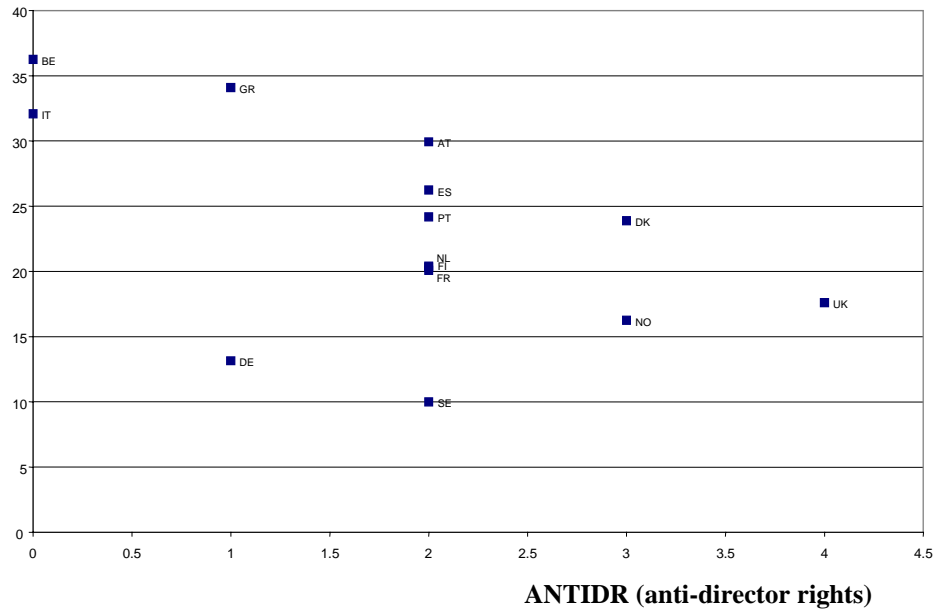
Part B

Foreign ownership



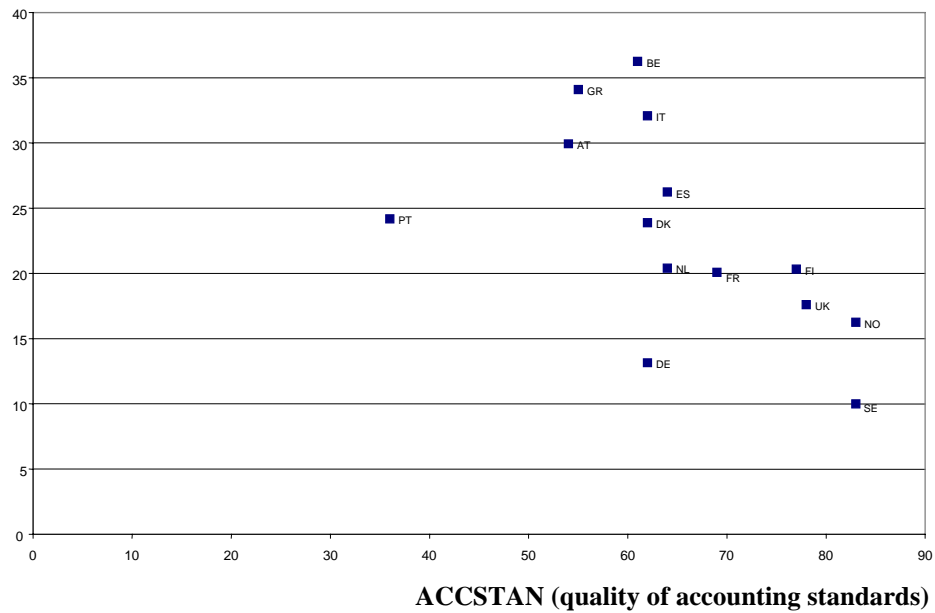
Part C

Foreign ownership



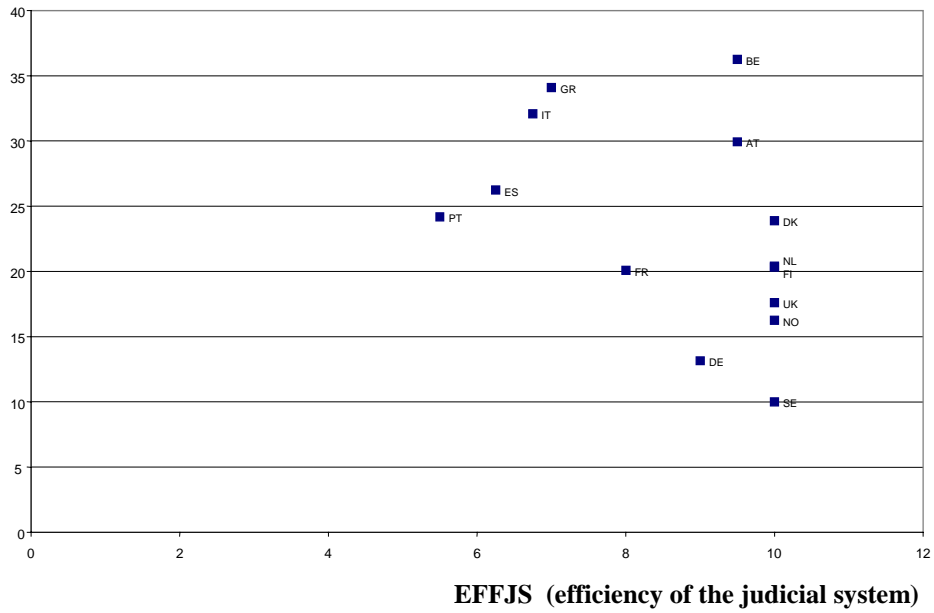
Part D

Foreign ownership



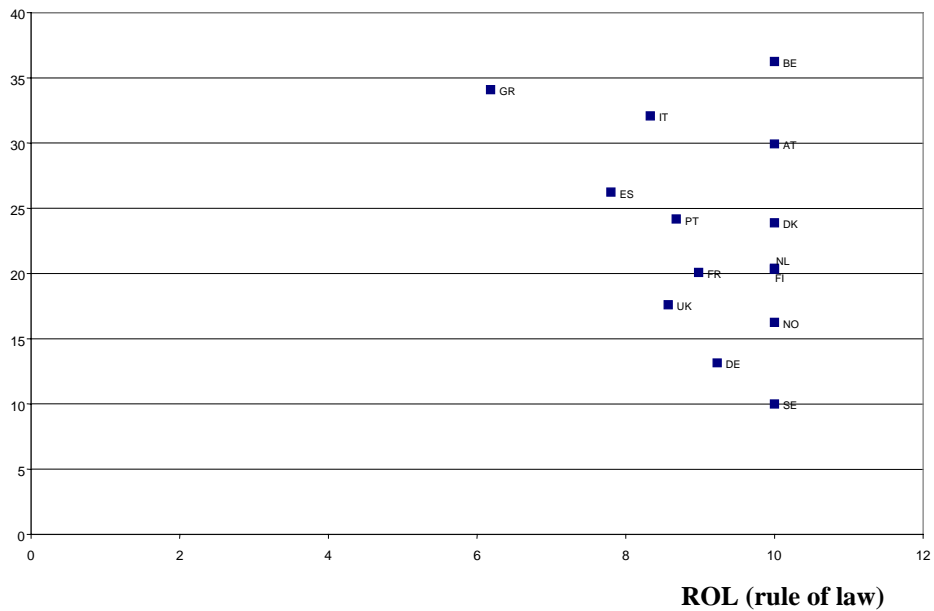
Part E

Foreign ownership



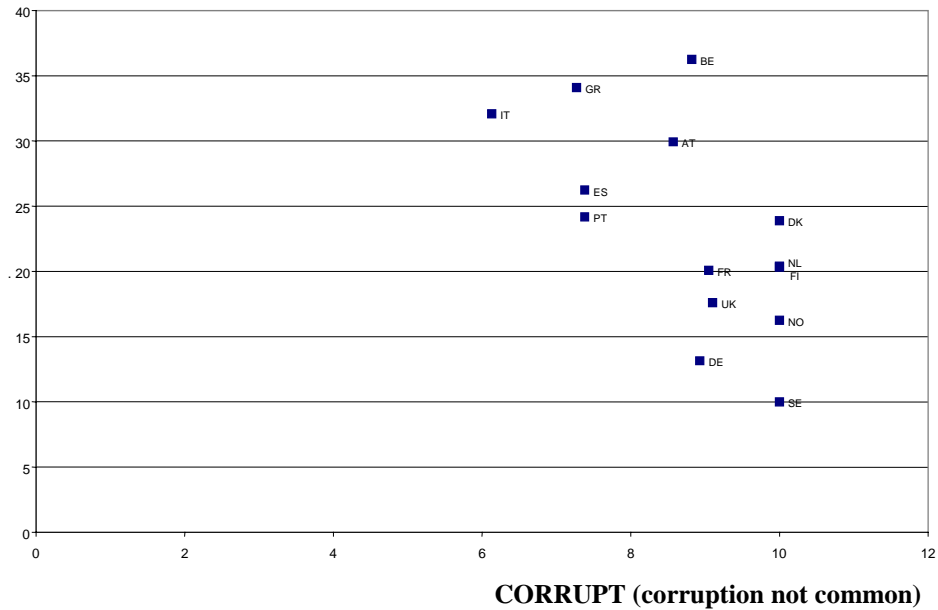
Part F

Foreign ownership



Part G

Foreign ownership



Notes. Legend of country labels : AT: Austria // BE: Belgium // CZ: Czech Rep. // DE: Germany // DK: Denmark // ES: Spain // FI: Finland // FR: France // GR: Greece // HU: Hungary // IT: Italy // NL: Netherlands // NO: Norway // PL: Poland // PT: Portugal // SE: Sweden // SI: Slovenia // UK: United Kingdom.

Diagrams are based on averages across years of country-year averages. An observation for a particular country and year is dropped if there are fewer than 35 firm observations. IMPROPER and INSIDERT are the only indices with time variation.