

Sabine Böckem/Anja Tuschke*

A TALE OF TWO THEORIES: FOREIGN DIRECT INVESTMENT DECISIONS FROM THE PERSPECTIVES OF ECONOMIC AND INSTITUTIONAL THEORY**

ABSTRACT

We analyze foreign direct investment (FDI) from two theoretical perspectives: the traditional economic perspective and the more recent institutional perspective. By combining a theoretical analysis with empirical tests, we are able to explore the explanatory power of both economic and institutional reasons for FDI. Our results show that a firm's decision to engage in a foreign market is influenced by the attractiveness of the target market and by prior FDI decisions of large and successful peers. Thus, both theoretical perspectives complement each other in explaining FDI. We believe that any research that ignores one or the other explanation suffers from a serious omission.

JEL-Classification: F21, O52, P20.

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1 INTRODUCTION

Traditionally, research on foreign direct investment (FDI) has focused on a firm's economic motives for international expansion, such as the attractiveness of markets (Caves (1971); Davidson (1980); Gripsrud and Benito (2005)), the behavior of competitors (Knickerbocker (1973); Graham (1978)), and productive efficiency (Brainard (1997); Markusen and Maskus (2002)). More recently, researchers have started to draw on institutional theory to show that social influence factors also play an important role for FDI decisions (Henisz and Delios (2001); Guillen (2002)). Although both streams of research provide valuable information on the factors that influence a firm's FDI decision, each stream sheds light on only a part of the picture. To obtain a more fine-grained understanding of

* Sabine Böckem, University of Bern, Institute for Organization and Human Resource Management, Engehaldstrasse 4, CH-3012 Bern, e-mail: Sabine.Boeckem@iop.unibe.ch. Anja Tuschke, University of Munich, Institute of Strategic Management, Ludwigstrasse 28, D-80539 München, e-mail: tuschke@bwl.lmu.de.

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FDI decisions, in this study we combine and contrast central elements of the economic perspective and of the institutional perspective on FDI.

A large body of research analyzes FDI from an economic perspective. Traditional FDI theory (e.g., Rugman (1986), or Caves (1971)) predicts that firms will invest in foreign markets in order to generate rents by exploiting firm-specific capabilities (e.g., products and knowledge). Furthermore, FDI enables firms to strengthen their strategic position by gaining more favorable access to scarce resources like labor, knowledge etc. (Chen and Chen (1998)). While manufacturing firms typically seek to exploit advantages in production costs and access to scarce resources, firms in other industries may be attracted by high rates of as yet unsaturated demand (Gripsrud and Benito (2005)). Consequently, the attractiveness of the labor and product markets and market accessibility are economic factors that influence FDI.

In contrast to an economic approach, FDI research conducted from an institutional perspective has lagged behind. A few recent studies show that FDI decisions are also affected by the firms' interorganizational relations with relevant peers. Martin, Swaminathan, and Mitchell (1998) find that the relations between suppliers and domestic buyers, competitors, and non-competing suppliers have an impact on the occurrence and timing of foreign market entries. Henisz and Delios (2001) and Guillen (2002) show that firms imitate the risky FDI decisions of peers in their industry or business group. These papers represent additions to economic explanations of FDI, since they clarify the ways in which international expansion moves are influenced either by a firm's interorganizational relations within its domestic market, or more generally by the firm's embeddedness in a social context. According to research in institutional theory, imitation of peers is not aimed at gaining economic rents, but at enhancing the firm's legitimacy and at decreasing the uncertainty associated with risky strategic decisions (Cyert and March (1963); DiMaggio and Powell (1983)).

We assume that both the economic and the institutional perspectives highlight important aspects of a firm's FDI decision. Therefore, we combine and compare the arguments of these two perspectives both theoretically and empirically. However, the two perspectives share some common ground, since both perspectives account for the phenomenon of parallelism in firm behavior. Under the economic perspective, firms that optimize independently are attracted by the economic rents a country's market offers, and several firms may follow the same allures. From the institutional perspective, the same mimetic FDI decisions might be caused by the firm's striving for legitimacy within its organizational field. To account for the described similarity in mimetic effects, we start our analysis by exploring those factors that we can easily attribute to either the economic or the institutional perspective. We then describe the common ground between both approaches.

To test our hypotheses empirically, we examine German FDI in 21 former Warsaw Pact countries between 1990 and 2003. After the fall of communism in 1990, a whole set of markets opened up to foreign investors. Several of these markets offered cheap resources and unmet demands, so they seemed highly attractive for FDI. However, uncertainty about the viability of such investments was particularly high, because FDI by Western firms was virtually nonexistent in these markets under the communist regime. Although

some information on the general political, economic, and social environment of these markets was probably available during the period of our study, it was very difficult to find individuals or entities with rich, first-hand experience.

Our study adds to the discussion on a firm's economic rationale for FDI by analyzing to what extent decision-makers are influenced by their quest for legitimacy and their need to mitigate risk. While we do not attempt to provide a comprehensive view on FDI, the combination of economic and institutional arguments does make it possible for us to describe the different characteristics of the same strategic decision from two important perspectives. The economically oriented FDI research addresses the economic rationale of foreign investments, and the institutional perspective helps to explain the extent to which these FDI decisions are influenced by the firm's striving for legitimacy and its quest for mitigating the uncertainty associated with investments in foreign markets. Second, our paper shows that both the economic and the institutional perspectives on FDI explain the same empirical phenomenon of the parallel behavior of firms. We find that in line with the respective theoretical perspective, the reasons for this parallel behavior are either linked to an economic rationale or to an institutional rationale. The common ground between the two perspectives highlights the necessity to include both perspectives in any analysis of FDI decisions. Otherwise, the explanatory power of one of the perspectives may be overrated. Third, by combining a theoretical analysis with empirical tests we are able to provide preliminary evidence about the actual explanatory power of the economic and institutional triggers for FDI. Our results indicate that both approaches have a complementary share in explaining the FDI of German firms in Eastern European markets. For economic reasons, the attractiveness of labor markets is an especially important trigger for FDI. From the institutional perspective, prior FDI decisions by prestigious peers play an important role.

2 REVIEW OF PRIOR STUDIES

Studies on foreign (direct) investment have a long tradition in international economics. For a more extensive review of this large body of literature see, for example, the textbooks by Caves (2007) or Dunning and Lundan (2008).

FDI as an international flow of capital has been explained by capital arbitrage arguments. Hymer (1960) was the first to offer a full microeconomic model of FDI to study these arguments in more detail. He assumes that firms invest abroad to maximize their total profits. As Hymer (1960), and later on Kindleberger (1969), convincingly argue, multinational enterprises are logically inconsistent with pure competition¹, such that additional effects are necessary to provide a convincing explanation of their existence. In this vein Hufbauer (1975) shows that FDI depends on demand elasticities and on production-function parameters, not on capital-cost differences. Additionally, empirical results show that the capital arbitrage rationale alone is not sufficient to explain observed FDI patterns (see for example D'Arge (1969) and Bandera and White (1968)).

1 Historically, the first attempt to incorporate oligopoly theory into FDI was provided by Knickerbocker (1973).

Clearly, without any additional mechanism the capital arbitrage hypothesis is neither satisfying theoretically nor confirmed empirically. Transaction cost arguments emerged as the most natural and powerful complementation (Dunning (1981); Rugman (1985); Teece (1986)). Market incompleteness joined with some kind of specificity (capital, knowledge, products, or assets in general) offer explanations for FDI streams. Transaction cost theory opens up the possibility of answering a wide set of more detailed questions, such as the search for factors that foster or hinder FDI, regional distribution of investments, choice of entry mode, or the effects of firm characteristics on FDI.

Horst (1971; 1972) provides a basic model to study the role of tariffs on a profit maximizing firm's FDI decision (see also Rugman (1980)). Many authors apply Horst's model, for example to give answers to questions such as the simultaneity of exports and FDI, or to extend it towards general equilibrium analysis.

Progress in economic modeling also generated some progress with respect to knowledge on the aggregate causes and consequences of international moves of multinational enterprises. By using the Heckscher-Ohlin model, it became possible to study FDI in a general equilibrium framework. For example, Neary (1978) assumes that there is short-run sector-specific capital combined with immobile labor. He shows that multinational companies that move capital to gather arbitrage profits equate the marginal product of capital across countries in one sector, but not across sectors. Specific factor models also show that the presence of internationally mobile capital, i.e., capital that moves around via multinational enterprises, may alter the basic patterns of comparative advantages (e.g., Jones (1980)).

A different line of research considers in more detail the implications of the existence of companies operating in several countries. For example, Markusen (1984) reintegrates the effects caused by such multinational enterprises into a general equilibrium model. He shows that multinational companies increase total productivity; moreover, they generate a competition effect as markets tend to become oligopolistic or even monopolistic.

Further insights come from the analysis of multistage production. In these models, there is an intermediate product that can be transformed into a final good in either the home country or in a foreign country. Helpman (1984; 1985) and Helpman and Krugman (1985, Part IV) study how the existence of multinational enterprises affects factor price equalization in this context. The main emphasis of these studies is on factor proportion. Brainard (1993a; 1997) shifted this basic focus. She analyses, both theoretically and empirically, the tradeoff between advantages of concentrating production in one place against production at the place of consumption to, for example, economize on transportation costs.

Since international economics naturally emphasizes regional structure, these studies are primarily interested in the regional distributions of economic activities. Helpman (1984) describes the cost-saving geographical distribution of production activities across several given locations. The general prediction from Helpman's work is that foreign direct investment should be from capital-rich to capital-poor countries. If product differentiation is essential, then two-way investment should occur. But Dunning (1981) shows a completely different result. Gross outflows are high for the highest-income countries and then drop

off sharply. Moreover, gross inflows decline systematically with income per capita. Brainard (1993b) provides very convincing results on Dunning's theoretical works. The total value of subsidiaries' sales increases with the combined national income of the respective countries under study, and with their similarity in size, just as predicted by a model of monopolistic competition in international trade.

Models of horizontal or market seeking FDI have also been developed, for example, by Markusen (1984) and Markusen and Venables (2000). According to these models, firms aim at getting access to new markets and markets that are not yet saturated. The knowledge-capital model synthesizes both aspects (Markusen (2002)). Empirical studies by Brainard (1997), Carr, Markusen, and Maskus (2001), Blonigen, Norbäck, and Urban (2003), and Bracconier, Norbäck, and Urban (2005) test these approaches, but do not offer a clear-cut picture.

Moreover, a wide set of mainly empirical studies analyses various influences of host country properties² on FDI activities. These papers highlight factors such as wage rates, labor availability, and political instability (Schneider and Frey (1985); Wheeler and Moody (1992)), market size (Dunning (1981); Wheeler and Moody (1992)), a market's openness to FDI (Brainard (1997)), its infrastructure (Wheeler and Moody (1992)), and cultural barriers (Hjerpps and Ahvanainer (1986); Veugelers (1991)). Another factor that relates to both the home and the target markets are exchange rates. Although surprisingly little theoretical work has been done on exchange-rate effects, Goldsbrough (1979) shows that in- and outbound FDI depends significantly on relative exchange-rate-adjusted unit labor cost differences. Studies by Ray (1989) and Brainard (1997)³, among others, confirm Goldsbrough's findings.

Another stream of literature focuses on firm attributes and their relation to FDI. Investing in a foreign market can be part of a firm's growth strategy. Firms tend to start their growth by strengthening their position in their own country. Once the marginal returns from further expansion in the home country decline, then expanding into foreign countries becomes more and more attractive (Horst (1972)). Additional arguments in favor of such an internationalization process are based on a more detailed explanation of the observed development sequence. Before turning to riskier and more costly foreign investment, firms first start with investment that is associated with low information costs, low search costs, and low risk (Aharoni (1966); Kindleberger (1969)). Extending these findings, Davidson (1980) shows that there is a sequence of investments⁴ that starts in the home country, continues in countries close by, and moves on to countries farther and farther away. Using closely related arguments, various papers study the role of firm experience on FDI. A posi-

2 Additionally, there are many studies on the attributes of the source country as an important determinant of FDI. We do not mention these papers here.

3 For other models on exchange rate effects see Froot and Stein (1991), Blonigen (1997), or similar considerations on local taxation DeMooij and Ederveen (2003).

4 Timing and sequential decision patterns are topics in the economics literature. Gulamhussen (2004) offers a real-option model of entry timing for banks. He depicts the size and different types of outlets as decision variables. Benito and Gripsrud (1992) consider sequential decisions of the same firm, Chang (1995) depicts sequential investment by the same firm in different product markets of the same host country to highlight the role of experience. Andersen (1993) analyzes sequential decision patterns in which firms start by exporting products, later on establishing their own sales subsidiary and finally shifting production. Datta, Herrmann, and Rasheed (2002) provide a survey on studies about different entry modes without such a sequential structure.

tive effect is found in some, but not in all studies (see for example Johanson and Vahlne (1977); Benito and Gripsrud (1992); Yu (1990)).

There are several recent empirical papers in which the decision rationale is essentially based on economic arguments, but these papers do not develop the basic aspects of a firm's FDI decision in detail. Martin, Swaminathan, and Mitchell (1998) provide evidence that the desire to follow current or potential buyers into a new country can be one explanation for international expansion moves. Gripsrud and Benito (2005) study the FDI of retail companies based on several measures of market attractiveness, distance, and firm experience. Rothaermel, Notha, and Steensma (2006) consider the international expansion of Internet firms. In addition to the country-specific characteristics of customers, they emphasize country risk, cultural differences, and market size as important variables. Tan and Vertinsky (1996) consider Japanese electronics companies and their FDI in the U.S. and Canada. Due to their narrow focus on a specific industry, they are able to use more detailed data on industry characteristics, such as market concentration, advertising activities, and R&D intensity, which are rarely available in studies covering a broader set of industries. Similarly, Rose and Ito (2008) consider the narrow focus of interactions between Japanese automobile manufacturers.

Imitating other firms is also regarded as an important trigger for FDI. Focusing on oligopolistic markets, Knickerbocker (1973) and Graham (1974) describe two forms of imitation, follow-the-leader behavior and cross-investments. According to Knickerbocker's (1973) results, firms within the same industry are likely to imitate the FDI decisions of competitors to prevent their competitors from gaining competitive advantages in new markets. According to Graham (1974; 1978), FDI can be a reaction to the decision of a foreign competitor to invest in the focal firm's home market. These cross-investments are a form of retaliation intended to deter the foreign competitor from further investments in the focal firm's home market.

The imitation of FDI decisions has also been studied from an institutional perspective. According to this perspective, firms imitate the decisions of other companies to mitigate risk and to acquire legitimacy (DiMaggio and Powell (1983)). Henisz and Delios (2001), and Guillen (2002) show that firms imitate the risky international expansion moves of other firms in the same domestic industry and of partners within the same business group. These papers contribute to the explanations of imitative FDI behavior. However, they are also restricted to the imitation of competitors. Institutional research in related fields notes that prestigious firms may serve as role models and may also be imitated by less prestigious peers (Burns and Wholey (1993); Haveman (1993)).

The discussion on spillovers of FDI and agglomeration economics (Aitken, Hanson, and Harrison (1997); Porter (1998); Kneller and Pisu (2007)) seems to point in a similar direction. Nevertheless, as Shaver and Flyer (2000) argue, firms with weak technology or weak human resources profit from FDI clustering, while strong firms prefer separation to avoid spillovers. Thus, parallelism in investment decisions induced by agglomeration economics cannot show up when taking the average across the population of all firms, especially under sequential decision structures.

3 TWO THEORETICAL PERSPECTIVES

3.1 THE COMMON STRUCTURE OF BOTH PERSPECTIVES

There are n firms in the home country that consider investing in some of the host countries $i \in I$ where I is the set of all potential host countries. Not all firms immediately and simultaneously decide whether or not to invest. On a priori grounds, little can be said about the order and timing of these decisions. Some company has to be the first to make an FDI decision with respect to a specific market. We depict this unknown process by using the following stylized setting. Let there be m decision periods, for example, years. A random mechanism assigns firms to decision periods. The number of firms that decide each period does not need to be equal. Whenever the order of decisions plays an important role, we refer to the first firm as A , the second as B , and so on.

Once someone in the firm proposes the idea of becoming active in some foreign country, the top management team must decide in favor or against such an investment. Rarely, is the same decision on the agenda repeatedly. Therefore, we assume that each firm decides once and for all whether or not to invest in a specific market. Any decision immediately becomes common knowledge among all firms. Decisions are made to maximize expected firm profits. Let Π_{jt}^h denote expected operating profits of firm j in period t if j is active only in the home country. Let Π_{jt}^{h+i} denote expected operating profits of firm j in period t if it is active in the home country and in country i .

With respect to the investment decision, expected increases in operating profits have to be traded off against the costs of FDI. Let Z_{ji} denote FDI costs that firm j faces if it decides to invest in country i . Let FDI costs be time invariant. The focal firm prefers to become active in country i if

$$\sum_{t=0}^{\infty} \delta^t \Pi_{jt}^h < \sum_{t=0}^{\infty} \delta^t \Pi_{jt}^{h+i} - Z_{ji}, \quad (1)$$

where δ is the discount factor, equal across all firms. Thus, expected profit gains due to the investment must overcompensate FDI costs,

$$Z_{ji} < \sum_{t=0}^{\infty} \delta^t \left[\Pi_{jt}^{h+i} - \Pi_{jt}^h \right]. \quad (2)$$

In any given population of firms, firms may differ in their production technology and cost structure, or they may have individual revenue functions as they act in different product markets, or they may face different FDI costs. Further, they may be dissimilar in how they form their expectations. We examine all these potential differences to get a complete picture of how individual firms' decisions lead to predictable economy-wide effects.

3.2 BUILDING BLOCK I: THE ECONOMIC PERSPECTIVE ON FDI

In this section we explicitly assume that all necessary information is equally available to all parties, such that expected values can easily be calculated and that informational differences do not exist. Firms maximize expected profits independently.

Efficiency Seeking FDI and Production Shifts

Suppose firms consider the possibility of shifting production⁵ to some host country $i \in I$. For such a production shift to make sense, there must be some cost advantage the firm wants to and can exploit. Thus, there are three necessary conditions for a specific FDI decision. First, we need to have an incomplete resource market, which is almost always the labor market. Second, there must be firm-specific knowledge or assets that can be exploited by the FDI decision. Third, the firm must be able to move its technology, expressed by the production function, to a new country.

Suppose all three conditions hold, and that all input goods except labor are traded on perfectly competitive international markets. Input prices for the competitively traded inputs are equal across all countries. Labor is traded at regional markets at local wage rates. Let w_{ht} denote the wage rate in the home country in period t , and let w_{it} stand for the respective wage rate in country i . If labor markets were perfect markets, then w_{it} would be a market clearing wage rate and there would be no unemployment above a standard fluctuation rate. Nevertheless, unemployment rates l_{it} above this natural fluctuation rate indicate market imperfections.

We examine the investment decision of an individual firm in this setting. Expected operating profits in period t are given by

$$\Pi_{jt}^k = R_{jt}^h(y) - C_{jt}^k(y), \quad k = i, h, \quad (3)$$

where y denotes the quantity, $R_{jt}^h(y)$ denotes expected revenues generated by selling y in the home country, and $C_{jt}^k(y)$ stands for expected costs. If $w_{it} < w_{ht}$ for all $t \leq T$, production in the host country is less costly than in the home country, $C_{jt}^i(y) < C_{jt}^h(y)$.

Marginal production costs are also lower, $\frac{\partial C_{jt}^i(y)}{\partial y} < \frac{\partial C_{jt}^h(y)}{\partial y}$. These cost differences increase as the wage differential increases, $\frac{\partial C_{jt}^k(y)}{\partial w_{kt}} > 0$, and $\frac{\partial^2 C_{jt}^k(y)}{\partial y \partial w_{kt}} > 0$.

Because wages are determined by labor supply and demand, and also by market imperfections, the wage effect depends on the wage rate before the firm adds additional labor demand, and the unemployment rate. The lower the wage rate before the firm's production

5 Even though such a production shift can be fully or partially realized, we restrict our theoretical arguments to the case of a full production shift without loss of generality.

shift, the lower is *ceteris paribus* the wage rate afterwards. The unemployment rate also plays an important role. Suppose there is no unemployment above the natural fluctuation rate. The firm's additional labor demand will increase demand in the labor market. Therefore, if labor supply is an increasing function of the wage rate, it will affect the equilibrium wage rate. But if unemployment is sufficiently large to cover the additional demand, the increase in demand will not influence the wage rate. Therefore, greater unemployment rates imply less increase in wages due to additional demand. But because any increases in the wage rate will reduce the wage differential that the firm can exploit, a larger wage increase due to low unemployment would make FDI less attractive. Therefore, *ceteris paribus*, the greater the unemployment rate, the more attractive is investment in this country.

Given the wage differential and an arbitrary production quantity y , the expected operating profits under home production are lower than are the expected profits after a production shift, $\prod_{jt}^{h+i} > \prod_{jt}^h$. According to condition (2), if the profit difference is sufficient to cover FDI costs, then the firm will shift production to the new market. Thus, these two aspects of labor market attractiveness are decisive factors, not only for the investment decision of an individual firm, but also for the FDI decision of all firms in the population. Since \prod_{jt}^{h+i} is decreasing in w_{it} and (weakly) increasing in l_{it} , the share of firms with profitable investment possibility decreases with the current wage level and increases with the unemployment rate. Thus:

Hypothesis 1: *A firm's likelihood to invest in a specific foreign market is positively associated with the attractiveness of the foreign country's labor market.*

Market Seeking FDI

We examine the situation in which firms invest in the host country to sell their products. To keep our presentation clear, we assume that firms do not produce goods in the foreign market. Instead, they centralize production in the home country. Moreover, we assume that distribution of the products in the host country cannot be efficiently organized from the home country. For example, due to coordination costs in the distribution of perishable goods or the necessity to provide after-sales services for technical products, we assume that the costs of selling the firm's products in the host country when the firm is not physically present are prohibitively high. Thus, the firm needs to enter this market if it wants to sell products there. To keep sufficient control over the firm's marketing strategy, product margins, internal know-how, and reputation, firms enter the market by opening up a subsidiary.

If firm j sells in the home country only, the expected operating profits in period t are given by

$$\prod_{jt}^h = R_{jt}^h(y_t) - C_{jt}^h(y_t). \quad (4)$$

But if the firm invests in the new target market, its expected operating profits in period t are given by

$$\prod_{jt}^{h+i} = R_{jt}^h(y_t^h) + R_{jt}^i(y_t^i) - C_{jt}^h(y_t^h + y_t^i) - Z_{ji}, \quad (5)$$

where y_t^k is the sales quantity and R_{jt}^k denotes expected revenues in country k in period t , $k = i, h$. FDI will occur if the additionally generated profits can be expected to cover the costs of FDI.

We wish to determine the fundamental influences on the relation of costs and revenues. If marginal costs are constant, no change in the home country profit will occur in the case of market seeking FDI as we see from

$$\frac{\partial R_{jt}^h(y_t^h)}{\partial y} = \frac{\partial R_{jt}^i(y_t^i)}{\partial y} = \frac{\partial C_{jt}^h(y_t^h + y_t^i)}{\partial y}. \quad (6)$$

With increasing marginal costs, investing in the host country will reduce home country profits, and the additional profits in the host country must overcompensate for this reduction. Thus, the expected revenues in the host country are the key issue for market-seeking FDI. Ceteris paribus, larger markets lead to larger marginal revenues and therefore to larger expected profits. Similarly, growing markets lead firms to expect that tomorrow's marginal revenues will increase and that higher profits will be realized in the future. These arguments hold not only for the focal firm, but also translate to our population of firms. Therefore, the likelihood of a randomly selected firm to enter a market is positively associated with the attractiveness of the product market.

Hypothesis 2: *A firm's likelihood to invest in a specific foreign market is positively associated with the attractiveness of its product market.*

3.3 BUILDING BLOCK II: THE INSTITUTIONAL PERSPECTIVE ON FDI

According to the institutional perspective, firms imitate the strategic decisions of other companies to mitigate risk and to acquire legitimacy (DiMaggio and Powell (1983)). Based on this logic, prior empirical work shows that firms are influenced by FDI decisions within their domestic industry or business group (Henisz and Delios (2001); Guillen (2002)). Although these studies advance our knowledge about how a firm's embeddedness in the domestic market influences its FDI decisions, the results apply only to intra-industry imitation. Hence, economic reasons, such as a competitive response and the quest for positive externalities, may also account for the intra-industry and intra-business group imitation of FDI decisions. Consequently, additional research is needed to better capture the reasons behind an institutionally-oriented imitation of FDI decisions.

Still unanswered is the question of why and how the observable behavior of other firms can provide legitimacy for the own behavior. If imitation is more than self-deception, then the advantage the firm's management believes it will achieve by imitation must really occur, at least on average. Thus, the strategy must be an equilibrium phenomenon. This reasoning gives us a different view of imitation. Imitation in this strict sense means that

the observation of other firms' behavior has a direct effect on the outcome of the focal firm's optimization problem. Since such an effect cannot take place through additional revenues or cost gains, any influence that the firm's social context may have must be part of the expectation formation process.

The explicit consideration of a firm's expectation formation resembles the microeconomic foundation of imitation behavior through informational cascades as offered, for example, by Bikhchandani, Hirshleifer, and Welch (1998) and Scharfstein and Stein (1990). These authors provide models of rational imitation if all firms are identical. But because both perspectives contribute to our understanding of FDI decisions, we want to combine the economic perspective of optimizing behavior with the institutional perspective of imitation. Any synthesis or comparison of the two perspectives is impeded by the fact that they share some common ground, parallelism in behavior. Firms may choose the same behaviors because they are attracted by the same favorable economic conditions, or they may show the same behavior as they imitate others to acquire legitimacy. Thus, parallelism in specific investment decisions is not per se the result of imitation as it has been implicitly claimed by most empirical studies that we know of. Therefore, a necessary step forward is to focus on those features that are different for the two perspectives.

One of the differentiating features for the economic and the institutional perspectives is the influence of other firms' prestige. From the economic perspective, the prestige of a peer does not have any effect, because economic rents do not depend on it. However, under the institutional perspective, the prestige of successor firms in the decision sequence may play an important role, because it may foster imitation. Thus, we need to develop a convincing model of the focal firm's selective imitation of prestigious firms. Our first step is to give up the assumption that all firms are identical. Without loss of generality, we split firms into two groups, which we call prestigious or non-prestigious. Prestigious firms can either be more successful than their peers, or they can be larger. The type of each firm is common knowledge.

Prestigious firms often serve as role models within an economy. Other firms may believe that prestigious firms are better informed or that their strategic abilities are superior. Since a company's success is more than just luck, either the human capital employed or the organizational structures or both, are superior in firms that are more successful. At least some of these factors should persist and should have a positive effect on future decisions. Similarly, a large firm must have had a long period of successful growth, again driven by success factors such as the human capital, superior organizational structures, or both. Based on these arguments, we assume that some of these success factors are still present in a prestigious firm. Consequently, we can also assume that in comparing a prestigious company with a less prestigious company, the probability of making the right FDI decision should be higher for the prestigious firm. The difference in the probability may influence the decision processes of other firms within the organizational field.

The expected returns from a specific FDI decision are highly uncertain. Suppose that two states of the world are possible. If firm j invests in market i , the uncertain state of the world

can turn out to be either good, which leads to profits $\prod_{jt}^{h+i} > 0$ or bad, which leads to $\prod_{jt}^{h+i} < 0$. For the moment, we assume that these payoffs are common knowledge and time invariant. Let \bar{p}_{ji} denote the a priori probability of the good state of the world, and let \underline{p}_{ji} denote the respective probability of the bad state of the world, $\bar{p}_{ji} = 1 - \underline{p}_{ji}$. Based on these a priori probabilities, FDI will contribute to the firm's success if

$$\sum_{t=0}^{\infty} \delta^t \left(\bar{\prod}_{jt}^{h+i} \cdot \bar{p}_{ji} + \underline{\prod}_{jt}^{h+i} \cdot \underline{p}_{ji} \right) - Z_{ji} > 0. \quad (7)$$

Consider firm *A*, the first firm that has to decide about investing in a specific country. Since no other firm has as yet made such a decision, imitation is impossible. Therefore, firm *A* can rely only on its own judgment. Thus, it will use all available information to individually update the a priori probabilities for the two states of the world. It will invest in country *i* if the updated probabilities make FDI look economically attractive. Even though we assume that all firms have access to the same information, differences between firms play a role here. As argued above, prestigious firms are more successful in translating the available information into an appropriate decision. For firm *A*, its own prestige does not make a difference, but for all successors, the (high or low) prestige of firm *A* will have a strong influence.

Consider firm *B*, and suppose that firm *A* has decided to invest. Given our assumptions, firm *B* can infer that firm *A* has given a stronger weight to the good state of the world, or that firm *A* has come to a positive evaluation of the profitability of FDI. Thus, firm *B* has an informational advantage. Without any activity on its own, it receives firm *A*'s judgment on the profitability of FDI and can infer the reliability of this judgment from firm *A*'s prestige. However, firm *B* might also choose to evaluate the probability of a successful FDI on its own. As a result, firm *B* can rely on two judgments for its FDI decisions. Based on this, firm *B* will update the a priori probabilities and will decide about FDI based on these updated probabilities⁶.

The exact updating procedure of firm *B* has to be thought of as a black box⁷. Nevertheless, we can deduce some robust effects. Suppose we are at stage *s* in the decision sequence such that *s* - 1 firms have decided on investment so far. Let *P* be the number of prestigious firms that have already invested in a specific market and let *NP* denote the number of non-prestigious investments, $N = P + NP$ ⁸. The larger the number of prestigious firms that have already decided to invest in a specific market, the more positive signals can be inferred and incorporated in the updating procedure, such that the updated probability of the good state of the world, $\bar{p}_{ji} = (P, N, NP)$, has to increase in *P*,

- 6 At this stage of our analysis, a fundamental difference between the institutional and the economic perspective becomes obvious. While the economic approach assumes perfect and complete information, the institutional approach depends on informational differences. In a world of perfect and complete information, the institutional rationale would not make sense.
- 7 A fully detailed model of Bayesian updating that can provide a foundation for our considerations is available from the authors on request.
- 8 We note that once we know the decision sequence up to stage *s*, these values are sufficient to also describe the number of non-investing prestigious and non-investing non-prestigious firms.

$$\bar{p}_{ji} (P = k + 1, N, NP)_{s+1} > \bar{p}_{ji} (P = k, N, NP)_s, \tag{8}$$

for all $k = 0, 1, 2, \dots, k < k_i$,

$$\bar{p}_{ji} (P = k + 1, N, NP)_{s+1} \geq \bar{p}_{ji} (P = k, N, NP)_s, \tag{9}$$

for all $k \geq k_i$.

We comment on k_i in more detail below.

The updated probability of the bad state must decrease with the number of prestigious firms that have already invested:

$$\underline{p}_{ji} (P = k + 1, N, NP)_{s+1} \leq \underline{p}_{ji} (P = k, N, NP)_s, \tag{10}$$

for all $k = 0, 1, \dots$,

where for all $k < k_i$ the strict inequality holds.

Because a prestigious firm creates a more reliable judgment, investment decision of k prestigious firms will have a stronger effect than k FDI decisions where some of these firms are non-prestigious. Still, any investment decision conveys some positive judgment, such that investment decision of non-prestigious firms will also contribute in the updating procedure. We summarize these arguments in the following inequalities. For $l < k < k_i$,

$$\bar{p}_{ji} (P = k, N = k, NP = 0)_s > \bar{p}_{ji} (P = l, N = k, NP = k - l)_s \tag{11}$$

$$> \bar{p}_{ji} (P = 0, N = k, NP = k)_s \geq \bar{p}_{ji},$$

$$\underline{p}_{ji} (P = k, N = k, NP = 0)_s < \underline{p}_{ji} (P = l, N = k, NP = k - l)_s$$

$$< \underline{p}_{ji} (P = 0, N = k, NP = k)_s \leq \underline{p}_{ji}.$$

The observed investments of other firms will shift the probability towards the good state of the world in the updating procedure, and the larger the number of prestigious firms that have already invested, the stronger this effect will be. This probability shift may influence the FDI decisions of subsequent firms.

Suppose firm B would be economically indifferent about FDI if it were to base its decision on the a priori probabilities only,

$$\sum_{t=0}^{\infty} \delta^t \left(\overline{\Pi}_{Bt}^{h+i} \cdot \bar{p}_{Bi} + \underline{\Pi}_{Bt}^{h+i} \cdot \underline{p}_{Bi} \right) - Z_{Bi} = 0. \tag{12}$$

Observing that a prestigious firm A has invested shifts the updated probabilities such that

$$\sum_{t=0}^{\infty} \delta^t \left(\overline{\Pi}_{Bt}^{h+i} \cdot \overline{p}_{Bi}(P=1, N=1, NP=0)_2 \right) \quad (13)$$

+ $\underline{\Pi}_B^{h+i} \cdot \underline{p}_{Bi}(P=1, N=1, NP=0)_2$) - $Z_{Bi} > 0$
holds.

The more firms that have already invested in a specific market, the more likely it is that FDI in this market will appear to be economically attractive for the focal firm. The larger the number of prestigious firms that have invested, the stronger this effect will be. Once a sufficient number of prestigious firms, k_i , have invested in a specific market, the probability shift becomes overwhelmingly strong. Any negative judgment by the focal firm is now outweighed by the predecessors' behavior. At that stage, for a firm to create its own judgment seems no longer worth while. Even if the firm had a negative own judgment, it would be overruled by the positive judgments of prior investors. As a consequence, all firms entering the market later will rely only on what they infer from the behavior of their predecessors. With a sufficiently high number of prior entrants, the investment decision will become institutionalized.

Even without a complete institutionalization of the FDI decision, we can assume that firms rely on imitation once a sufficient number of prestigious firms have invested in a specific market. Given the strong role of prestigious firms, we state the following hypothesis.

Hypothesis 3: *A firm's likelihood to invest in a specific foreign market is positively associated with the number of prestigious firms that have already invested in the same foreign market.*

3.4 EFFECTS COMMON TO BOTH PERSPECTIVES

As stated in Hypothesis 3, the number of positive FDI decisions by prestigious firms will influence the probability of FDI by the focal firm. The more prestigious firms have already invested in a specific market, the more reliable positive signals are around. Even the investment decisions of non-prestigious firms, however, are likely to reveal a positive signal and therefore foster the institutionalization of the investment decision. Thus, we state the following hypothesis.

Hypothesis 4: *A firm's likelihood to invest in a specific foreign market is positively associated with the number of all firms that have already invested in the same foreign market.*

Although we can derive the same hypothesis from the economic perspective, the rationale behind the hypothesis is completely different. Consider a specific market i and our population of n firms. If we could pin down the profit functions of all firms, then we could

calculate the fraction of firms for which investment would be profitable. n_1 denotes this unknown number of firms. Thus, the true ex ante probability that a randomly chosen firm will decide to invest in market i is just equal to n_1/n . Nevertheless, n_1 is unknown to the researcher and to any outside observer. Given that firms are allocated to the decision sequence by a random process, if we have observed a time span covering K_1 firms' decisions and k_1 FDI decisions, then our best estimate for the share of firms that will find investment profitable is k_1/K_1 . Now, we can best estimate the probability that the next randomly chosen firm will invest in the same market by k_1/K_1 . The more firms that have decided to invest in the market so far, the larger is tomorrow's expected investment probability. If we include the number of previous FDI decisions in an empirical estimation of the investment probability, then we will find a positive relation. We note that this positive relation does not rest on any notion of imitation, but is the consequence of our own ignorance about the true share of firms that find FDI profitable.

Without a common model structure that is able to handle both the institutional and the economic perspectives, this common effect eliminates any possibility of separating imitation from economically driven parallel behavior. Accordingly, Haunschild and Miner (1997) provide evidence of a positive relation between the number of previous investors and the investment probability, and attribute it to imitation. But Kinoshita and Mody (1997) attribute parallel decision solely to an information cascade and economic parameters. Based on our theoretical background, we are able to provide additional results. Under imitation in the strict sense, the FDI of a prestigious firm should have a stronger influence on the investment probability than would an investment decision of a non-prestigious or average firm. If only economically driven parallel behavior exists, then no such difference should emerge.

4 DATA AND METHODS

4.1 SAMPLE

To test our hypotheses, we analyze FDI decisions of large publicly listed German firms between 1990 and 2003 in the 21 former Warsaw Pact countries: Armenia, Azerbaijan, Belarus, Bulgaria, Czech Republic, Estonia, Georgia, Hungary, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, Romania, Poland, Russia, Slovakia, Tadjikistan, Turkmenistan, Ukraine, and Uzbekistan. Since only a few firms in our sample were able to invest in these markets prior to the fall of the Iron Curtain in 1990, the time frame of the study helped us to avoid left censoring.

Our sample comprises firms that are listed in the index of the 100 largest stock corporations in Germany. We remove firms that are either subsidiaries of other firms in our sample or subsidiaries of foreign firms (Chang (1995)). For the remaining firms, we follow a three-step procedure to obtain data on FDI.

First, we checked the "list of share properties" in each firm's annual report. Although some of the firms in our sample published detailed information on their investment

decisions in the countries under study, others restricted the information in the “list of share properties” to FDI that exceeds a certain threshold. To account for this, our second step was to contact the firms’ IR departments. We asked these departments to provide additional information on their investments in the countries under study, to send a more detailed “list of share properties” for the period from 1989 through 2003, or both. In cases in which a firm’s IR department could not help, we referred to the “Handbook of German Listed Companies” for further information on FDI in Eastern Europe. We also searched the LexisNexis database for press reports that contained both the name of the respective company and the search terms related to FDI. With this data in hand, we contacted the firms a second time and asked them to confirm or correct our information. Third, we made use of the fact that German firms are required to file a detailed “list of share properties” with the registration office of the responsible district court each year. To correct inconsistencies and to reduce missing data, we contacted the respective registration offices and looked at the firms’ original filings. The data collection effort resulted in complete data for 82 firms.

For data on economic and demographic characteristics of the 21 Eastern European markets under study, we used statistics published by the United Nations, the International Labor Organization, and the Statistical Office of the European Community. We obtained data on the political risk of the countries in our sample from BERI S.A., a company that analyzes market risk worldwide. We acquired firm-level characteristics from annual reports, and information on the firms’ industry classification from the Deutsche Börse Group.

4.2 VARIABLES

Dependent variable: The dependent variable in our study is FDI. In our empirical model, FDI is an indicator coded as one if a firm made a direct investment in a particular Eastern European market in any given year. Following the definition of the Organization for Economic Co-operation and Development (OECD) and the International Monetary Fund (IMF), we verified FDI if a firm established a wholly owned facility or acquired at least 10% of the ordinary shares of a host country firm. Many prior studies, such as Hennart and Park (1993), Chang (1995), Barkema, Bell, and Pennings (1996), Chang and Rosenzweig (2001), Delios and Henisz (2003), and Gimeno et al. (2005) use this same measure.

Independent variables: When we examine the economic factors of FDI, we are interested in the attractiveness of the foreign labor market. In accord with our theoretical outline, the wage rate and the rate of unemployment are feasible indicators for labor market attractiveness. Both variables are closely related and cannot be incorporated in the empirical analysis simultaneously. Since labor market incompleteness restricts the downward flexibility of the wage rate, labor market reactions are more closely indicated by changes in the unemployment rate than in the wage rate. Therefore, we use the *rate of unemployment* as an indicator for labor market attractiveness (Coughlin, Terza, and Arromdee (1991)).

We use market size and market growth to measure the attractiveness of the product market in a host country. Market size is captured by the variable *GDP per capita*. Prior empirical studies show that there is a positive correlation between the market size of a host country and a firm's likelihood to enter foreign markets (Davidson (1980); Coughlin, Terza, and Arromdee (1991)). *Growth in GDP per capita* is our proxy for market growth in a host country. Both the size and growth of a foreign market provide information on the host country's market potential. Consequently, both indicators capture the attractiveness of a host country for market-seeking FDI (Grubaugh (1987)).

To analyze the mimetic forces surrounding FDI, we examine the impact of prior FDI decisions by prestigious domestic firms on the focal firm's decision to invest in the same market(s). As indicators for prestige, we used firm size (log of number of employees) and firm success (ROA). For each year under study, we rank firms according to their size and success. We identify firms in the top quartile of the respective indicator as large and/or successful. We then denote the investments of these firms in specific Eastern European markets as *FDI of large firms* or as *FDI of successful firms*, respectively.

As an effect common to both the economic and the institutional perspectives, we expect that the decisions of the focal firm are positively affected by the number of similar decisions of other firms in our sample (see Katz and Shapiro (1985); Haunschild and Miner (1997); Sanders and Tuschke (2007)). To capture this effect, we include *FDI of all firms* in a specific host country for each country-year combination under study.

Control variables: We control for several additional factors at the country-, industry-, and firm-level. Prior research has determined that all controls affect FDI. All control variables have a one year lagged structure.

To capture the *political risk* of the 21 host countries under study, we use the political risk index provided by BERI S.A. The index is based on the rating of causes and symptoms of political risk by a group of experts. Examples of the causes of political risk are corruption, nepotism, the strength of movements for a radical government, and the negative influences of regional political forces. Symptoms of political risk are captured by indicators for societal conflict, which is defined as incidents involving strikes and street violence, and by indicators for the perceived instability of a country. In the original BERI index, political risk scores range from zero to 100, with increasing scores indicating a decrease in risk. For ease of interpretation, we calculate 100 minus the respective risk score so that as risk increases, the index increases. Analogous to BERI S.A., we identify four risk levels: low (0-30), moderate (31-45), high (46-60), and prohibitive (61-100). We calculate the political risk for each country and each year in our sample.

The second country level control variable is the *geographic distance* between the focal firm's headquarters in Germany and the capital of the host country. We measure distance as the log of kilometers. Prior studies, such as those by Davidson (1980), and Terpstra and Yu (1988), use geographic distance as an indicator for the riskiness of an investment decision. With increasing geographical distance, the firms face mounting logistical challenges and monitoring requirements (Terpstra and Yu (1988); Ito and Rose (2002)). Moreover,

managers tend to exhibit less familiarity with former Warsaw Pact countries that are more distant.

We also include a dummy variable to control for whether the decision to invest in a specific market is influenced by the country's steps toward accession to the European Union. We code the indicator *EU Accession* as one if a country signed a treaty to announce its intention to join the EU in any given year. It takes the value of two if negotiations concerning an accession had already been started, and a value of three if the European Commission recommended accession of the country. If a firm has taken no steps towards EU accession, the variable is coded as zero.

To control for unobserved industry effects, we use a dummy variable for each of the ten broad industry categories represented in our study. We adapt a version of the classification created by the Deutsche Börse Group. We also control for time unobserved effects by including a dummy for each year in our sample. We do not report the effects of the industry and year dummies in our tables, but the dummies are included in all our models.

At the firm level, we control for *firm size* by including the log of the number of employees. Firm size is related to factors that affect the ability for FDI, because larger firms tend to have greater financial and social resources, which influence FDI decisions (Delacroix and Swaminathan (1991)). Additionally, we control for prior *performance* by including the firm's ROA. Profitable firms are deemed to be more capable of absorbing the costs and risks of investing in newly emerging foreign markets.

Johanson and Vahlne (1977) describe the importance of experience and knowledge in foreign operations. The accumulation of experience reduces the degree of foreignness that confronts a firm when it invests in a new geographic market (Terpstra and Yu (1988); Agarwal and Ramaswami (1992); Delios and Henisz (2000)). We use two control variables to capture a firm's experience with entering and running operations in foreign markets. Our first is the firm's *foreign sales ratio*, which we measure as the ratio of foreign sales to total sales. The foreign sales ratio indicates an organization's underlying international orientation and thus may affect the firm's decision to engage in international expansion moves. With increasing experience in Eastern European markets, the firm learns to cope with the many challenges resulting from the political, economic, or cultural environment of the particular host countries. As a consequence, further investments in a similar cultural context may be more likely (Barkema, Bell, and Pennings (1996); Delios and Henisz (2003)). To capture this possibility, we control for a firm's prior *experience* in the region under study. We calculate this variable as the number of years that a firm had already been operating in any of the host countries under study. Thus, the indicator captures a firm's experience with FDI in a similar context.

4.3 ANALYSIS

To analyze our hypotheses, we use an event history analysis with time-varying and time-invariant covariates. This method allows us to estimate the likelihood of FDI for the same

organization at many different intervals, and accounts for censored observations for firms that did not engage in FDI in a specific country in the period under consideration. We use a discrete-time event history analysis (Allison (1984)) with each spell corresponding to one year. For the time period between 1990 and 2003, we have a total of 14 spells. The model has the following form:

$$\log \frac{P(jit)}{1 - P(jit)} = a(t) + b_1 X_1(ji) + b_2 X_2(ji, t - 1), \quad (16)$$

where $\log \frac{P(jit)}{1 - P(jit)}$ represents the logarithmic odds that firm j will invest in a specific foreign market i at any point during period t ; $a(t)$ represents the baseline hazard rate of FDI occurring at any time t ; b_1 denotes the change in the log-odds for each one-unit increase in a time-invariant covariate $X_1(ji)$; and b_2 represents the change in the log-odds for each one-unit increase in a time-varying lagged covariate $X_2(ji, t - 1)$.

The unit of analysis in our study is the unique firm-country combination. Our sample includes 1,659 combinations (79 firms in 21 countries), of which 407 adopted FDI. The spell for each firm-country combination begins in 1990. If a firm does not invest in a particular foreign emerging market under study, the spell is right censored by the end of 2003. Spells are updated at the end of each year to accommodate the annual time-varying covariates. To account for the possible non-independence of firm-country-spells, we use a robust variance estimator (Lin and Wei (1989)). We also cluster our data by firm-country combinations to account for the autocorrelation between investment decisions by the same firm in the same country across different years.

To compare the explanatory power of variables based on the economic perspective with variables based on the institutional perspective, we restrict our analysis to a firm's first investment in each of the markets under study. Once a firm invests in a specific country in any given year, the next year's risk set is diminished by the firm-country spells for which FDI has already occurred. This yields a total of 19,902 firm-country-year spells.

4.4 RESULTS

Table 1 presents descriptive statistics and correlations among variables. The correlation between the independent variables "FDI of large firms", "FDI of successful firms", and "FDI of all firms" is high. If there should be a problem with multicollinearity, then it would work against our predictions (Kennedy (2003)). Because multicollinearity inflates standard errors, it reduces the chance of finding significant effects. However, to avoid problems with multicollinearity, we use separate models to analyze the effects of these variables.

Table 1: Descriptive statistics and correlations

Variable	Mean	s.d.	1	2	3	4	5	6	7	8	9	10	11	12	13
1 FDI	0.02	0.14													
2 Unemployment	5.24	4.82	0.0926												
3 Market Size	1.9156	1.7286	0.0790	0.0022											
4 Market Growth	-1.33	10.10	0.0137	0.1420	0.2475										
5 FDI all firms	6.08	12.18	0.1803	0.4626	0.3328	0.1558									
6 FDI Large Firms	2.45	4.07	0.1680	0.5077	0.2701	0.1727	0.9579								
7 FDI Successful Firms	1.10	2.43	0.1752	0.4369	0.3265	0.1419	0.9545	0.9000							
8 Political Risk	59.71	4.85	-0.1065	-0.1343	-0.1673	-0.3440	-0.3544	-0.3550	-0.3448						
9 Geo. Distance	24.37	14.63	-0.1283	-0.2936	-0.4633	0.0189	-0.4214	-0.4408	-0.4075	0.2574					
10 EU Accession	0.29	0.59	0.1044	0.4963	0.3333	0.2388	0.6110	0.6408	0.5729	-0.3491	-0.4460				
11 Firm Size	9.54	1.48	0.0493	-0.0270	-0.0610	0.0033	-0.0804	-0.0762	-0.0759	0.0106	0.0537	-0.0404			
12 Performance	0.038	0.054	0.0020	0.0178	-0.0094	0.0406	0.0214	0.0282	0.0166	-0.0329	0.0053	0.0139	-0.1699		
13 For. Sales Ratio	0.56	2.06	-0.0039	-0.0060	-0.0086	-0.0363	-0.0095	-0.0119	-0.0092	0.0117	0.0006	-0.0096	-0.0375	0.0504	
14 Experience	4.19	4.89	0.0176	0.1348	-0.2251	0.2683	0.0545	0.0991	0.0464	-0.1833	0.0944	0.1479	0.2521	-0.0289	0.0007

Table 2: Discrete time event history analysis

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Constant	-0.336 (1.047)	-0.389 (1.039)	-0.908 (1.02)	-4.124 *** (1.023)	-3.481 *** (1.046)	-4.037 *** (1.036)
Political Risk	-0.118 ** (0.015)	-0.127 *** (0.014)	-0.12 *** (0.014)	-0.077 *** (0.014)	-0.082 *** (0.015)	-0.072 *** (0.015)
Geo. Distance	-0.084 *** (0.009)	-0.08 *** (0.009)	-0.079 *** (0.01)	-0.07 *** (0.009)	-0.069 *** (0.008)	-0.071 *** (0.009)
EU Accession	0.475 *** (0.123)	0.211 (0.143)	0.018 (0.172)	0.031 (0.146)	0.172 (0.155)	0.104 (0.156)
Firm Size	0.294 *** (0.043)	0.302 *** (0.042)	0.302 *** (0.043)	0.333 *** (0.045)	0.317 *** (0.044)	0.325 *** (0.045)
Performance	2.28 * (1.044)	2.241 * (1.039)	2.253 * (1.039)	2.26 * (1.079)	2.374 * (1.073)	2.287 * (1.082)
Foreign Sales Ratio	-0.023 + (0.012)	-0.023 + (0.012)	-0.023 + (0.012)	-0.017 (0.012)	-0.019 (0.012)	-0.017 (0.012)
Experience	0.06 *** (0.011)	0.061 *** (0.011)	0.062 *** (0.011)	0.077 *** (0.011)	0.074 *** (0.011)	0.078 *** (0.011)
Year and Industry Dummies included in all models						
Unemployment		0.079 *** (0.012)	0.082 *** (0.013)	0.02 (0.014)	0.05 *** (0.014)	0.037 ** (0.014)
Market Size			0.086 + (0.051)	-0.227 *** (0.058)	-0.189 ** (0.063)	-0.296 *** (0.068)
Market Growth			0.018 + (0.01)	0.042 *** (0.01)	0.031 ** (0.01)	0.04 *** (0.01)
FDI Large Firms				0.194 *** (0.019)		
FDI Successful Firms					0.197 *** (0.024)	
FDI all Firms						0.054 *** (0.006)
N	19,901	19,901	19,901	19,901	19,901	19,901
Wald Chi Squared	545.73 ***	596.694 ***	612.025 ***	792.63 ***	738.169 ***	771.921 ***

+ $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Dependent variable: Log-odds of FDI. Coefficients reported with cluster-robust standard errors below in parenthesis.

Table 2 contains the results of our estimation of H1 through H4. The table does not report the results for the dummy variables for the years 1990-2003 or for the industry categories. Most of the industry dummies are not significant. However, firms in the automobile industry were more likely to invest in Eastern Europe than were firms in other industries.

Consistent with the logistic transformation of the dependent variable, the coefficients resulting from the estimation represent the effect of each variable on the log-odds of FDI in any of the Eastern European markets under study. The problem with log-odds is that they cannot be straightforwardly interpreted (Hoetker (2007)). Instead, the literature suggests to calculate marginal effects or the slope of $P(jit)$ for the exogenous variables under study. Since $P(jit)$ is a nonlinear function, these slopes are not constant, but value dependent. To cope with this problem, other papers suggest two methods. Either all exogenous variables can be held constant at their respective mean (Long (1997)), or the values of the slope across all observation can be calculated and averaged (Train (1986)). In our sample, both methods show similar results. Based on the marginal effects with all other variables held constant at their mean, we report our findings in *Table 3* as the rate at which a one-unit-increase of a specific variable changes the average probability of FDI.

Because the changes in FDI probability depend on the scaling of the respective variable, we also state our results as elasticities at the mean. These elasticities report the relative change in FDI probability that is caused by a 1% increase of the focal variable above the mean, while holding constant all other variables at their mean.

These elasticities can be calculated as

$$\varepsilon_{P,x_k} = \frac{\partial P(jit)}{\partial x_k} \frac{\bar{x}_k}{\hat{P}} = (1 - \hat{P}) \hat{b}_k \bar{x}_k, \quad (17)$$

where \hat{P} denotes the predicted probability of FDI if all exogenous variables are set at their mean, \bar{x}_k is the sample mean of x_k , and \hat{b}_k is the respective regression coefficient.

Table 3 shows the change in FDI probability based on marginal effects and the elasticities.

We start the description of our findings with a look at the elasticities at the mean. Model 1 covers only the control variables. At the country level, political risk ($p < 0.001$), accession to EU ($p < 0.001$), and geographic distance ($p < 0.001$) show a significant influence on FDI. The table shows that a country's accession to EU fosters FDI, but the investment decision is impeded by political risk as well as by an increasing geographic distance between the market under study and the domestic headquarters of the firm. At the firm level, FDI probability increases with firm size ($p < 0.001$), firm performance ($p < 0.05$), and prior experience in the region under study ($p < 0.001$). The firm's foreign sales ratio ($p < 0.1$) is negatively related to FDI.

Table 3: Elasticities at the mean and integer effects

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Elasticities at the mean						
Political Risk	-6.997***	-7.509***	-7.135***	-4.562***	-4.887***	-4.276***
Geo. Distance	-2.044***	-1.943***	-1.911***	-1.696***	-1.660***	-1.723***
EU Accession	0.139***	0.062	0.005	0.009	0.050	0.030
Firm Size	2.790***	2.860***	2.868***	3.157***	3.010***	3.086***
Performance	0.086*	0.085*	0.085*	0.086*	0.090*	0.087*
Foreign Sales Ratio	-0.013 ⁺	-0.013 ⁺	-0.013 ⁺	-0.009	-0.011	-0.010
Experience	0.249***	0.256***	0.259***	0.321***	0.309***	0.323***
Unemployment		0.413***	0.426***	0.105	0.260***	0.190**
Market Size			0.164 ⁺	-0.432***	-0.359**	-0.563***
Market Growth			-0.024 ⁺	-0.056***	-0.041**	-0.053***
FDI Large Firms				0.473***		
FDI Successful Firms					0.216***	
FDI all firms						0.325***
Integer effects: Percent of probability change						
Unemployment		7.872***	8.134***	1.994	4.960***	3.631**
Market Size			8.574 ⁺	-22.566***	-18.764**	-29.413***
Market Growth			1.822 ⁺	4.196***	3.072**	4.011***
FDI Large Firms				19.286***		
FDI Successful Firms					19.610***	
FDI all firms						5.346***
⁺ $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$						

Comparing the elasticities of the variables in Model 1, we find that the political risk has the highest impact on FDI, followed by firm size, geographic distance, and the firm's own prior experience with FDI in Eastern Europe. Please note that on average, the political risk in the countries under study is 59.7. Therefore, it is close to a risk level that BERI labels as "prohibitively high". Consequently, the high negative impact of a 1% increase of the political risk on FDI is not surprising. The strong impact of size and distance is at least partly due to the log transformation of these variables. Any 1% increase of these log-transformed variables above their average values implies a sharp increase in the underlying value of these variables.

In Models 2 and 3, we examine the economic reasons for FDI in Eastern Europe. In accord with the first hypothesis, Model 2 shows that a country's unemployment rate has a positive impact on the firms' decisions to invest in a specific market ($p < 0.001$). A 1% increase in the independent variable enhances the probability of FDI in a specific market by 0.41%.

In Model 3, we include the two indicators for the attractiveness of specific Eastern European product markets, market size and market growth. Overall, we find only rudimentary support for H2. As predicted in H2, a host country's market attractiveness has a positive impact on the firms' decisions to invest in this market. Whereas a 1% increase in market size positively affects the probability of FDI in a specific market by 0.16%, the effect is only 0.02% for a 1% change in market growth⁹. However, we note that the significance of both indicators is weak ($p < 0.1$). Moreover, in line with the results of Henisz and Delios (2001), the direction of the influence of market size changes as we add more variables to our models.

In line with H3, we find a strong positive, significant association between the focal firm's decision to invest in a specific foreign market and the prior FDI of large and successful domestic firms. A 1% increase in the number of large firms who invest in a specific market, leads to a 0.47% increase in the FDI probability of the focal firm (Model 4), but a 1% increase in the number of successful domestic prior investors increases the FDI probability of the focal firm by only 0.22% (Model 5).

Comparisons between different FDI measures across models are problematic. Specifically, the means of the two variables, large and successful prior investors, are artificially decreased by construction. However, since the variables large/successful/all firms have the same scaling, we can rely on the rate at which a one-unit-increase of prior investments by these firms changes the average FDI probability of the focal firm. Expressed as an integer effect, the focal firm's FDI probability increases by 19.3% for each additional FDI of a large firm ($p < 0.001$) and by 19.6% for each additional FDI of a successful firm ($p < 0.001$).

Incorporating the common effect of both the economic and institutional perspectives, H4 assumes that the focal firm's FDI decision will be influenced by the total sum of domestic firms that have already invested in the same market. We found that on average, each 1% increase in the number of domestic firms that engage in FDI in a specific foreign market enlarges the focal firm's probability of investing in the same market by almost 0.33%, ($p < 0.001$). *Table 3* shows that the focal firm's investment probability increases by only 5.3% for each additional firm that has already invested in the same market, compared to 19.3% for each additional large firm and 19.6% for each additional successful firm.

Sensitivity analyses and post-hoc tests: To ensure the consistency of our findings, we test several alternative model specifications. First, we include a measure of wages instead of

9 We note that the negative sign of the elasticity comes from a negative average value. Due to transition processes, the majority of countries in our sample experienced shrinking GDP per capita in the time period after the fall of the Iron Curtain.

unemployment to capture the attractiveness of Eastern European markets for efficiency-seeking FDI. Due to limited data availability, the variable for wage is imperfect and the results are not significant. Second, we exchange the political risk index with a measure for operating risk in the markets under study (also provided by BERI S.A.). The direction and significance of our results are unchanged. Third, we use different specifications for a market's accession towards EU membership. Again, our results remain unchanged.

In a post-hoc test, we restrict our sample to those 16 Eastern European markets that are entered by at least one of our sample firms. In this reduced sample ($n = 14.456$), we find stronger evidence for efficiency-seeking and market-seeking FDI. The variable for unemployment increases in strength and is significant across all models. Although the impact of market size on a firm's FDI decision does not change significantly, the impact of market growth becomes larger and more significant. Not surprisingly, the influence of market entries by other firms is unchanged.

5 DISCUSSION

In accord with our assumptions, our empirical results show that firms seek to generate economic rents by engaging in efficiency- and market-seeking FDI. From an economic perspective, the firms in our sample may have hoped to boost their bottom-line results by relocating parts of their production to markets with lower wages. Alternatively, these firms may have sought to gain market share in the up-and-coming Eastern European countries. Moreover, the firms in our sample show a strong propensity to imitate FDI decisions of prior movers. As we predicted, the impact of large and/or successful prior movers on the focal firm's decision to invest in the same specific market is especially high. We interpret these results as evidence that the choice of location in Eastern Europe is guided not only by economic and industry-specific considerations, but also is strongly influenced by a firm's quest for legitimacy and for a mitigation of uncertainty associated with investing in these markets.

Our results provide support that both perspectives provide complementing rather than substituting views on FDI. As predicted by the economically orientated literature on FDI, decision makers aim at capitalizing on market opportunities and strive for efficiency. However, in doing so they are influenced by the decisions of other firms in the domestic market.

The high impact of prior FDI in a specific market on subsequent FDI decisions of other firms has implications for aspiring foreign markets that want to attract FDI. Because firms tend to imitate prior market choices of prestigious peers, countries can profit from well-directed efforts to attract FDI from large and successful companies. Investment decisions of these prestigious prior movers send signals about a market's attractiveness to other firms. Interestingly, these signals take effect beyond a firm's industry. In line with the institutional perspective, we expect that the strength of such signals further increases if the firm has problems to evaluate the attractiveness of a market correctly. Consequently, the government of aspiring foreign markets can profit from "investing" in these signals.

A robust pattern in our elasticity estimates deserves mentioning. Across all models, the elasticities with respect to a firm's own experience are quite large and significant. This result is a good indicator for the fact that the "liability of foreignness" (Zaheer (1995)) decreases as firms gain experience with running operations in foreign markets. Future research is needed to determine in how far firms rely on similarities between foreign markets to economize on their own prior experience. Further, it would be interesting to learn more about the type of risk (market-based risk or decision-based risk) that causes firms to imitate FDI decisions of their prestigious peers.

6 CONCLUSION

The objective of our research is to compare and contrast the arguments of economic and institutional theory concerning FDI. To obtain a more fine-grained picture of why firms invest abroad, we explicitly model both the economic and the institutional rationales behind FDI and test both approaches empirically. The main part of our theoretical analysis focuses on arguments that can be directly attributed to one of the two approaches. Moreover, the economic and institutional perspectives on FDI share some common ground, which is the parallel behavior within an industry. Both perspectives explain the same empirical phenomenon by linking it either to an economic rationale or to factors associated with the firm's embeddedness in a social context. Our empirical sample, comprised of direct investments of German firms in 21 Eastern European markets between 1990 and 2003, makes it possible for us to test effects that are directly attributable to one of the theoretical perspectives, and to account for the common ground between both perspectives.

We recognize that this study has a number of limitations. First and foremost, there is only limited availability of longitudinal data on market conditions in Eastern Europe. Ideally, we would have been able to use a larger number of indicators for efficiency- and market-seeking FDI, e.g., strategic resource seeking and coercive pressures for imitation. Although data availability is better for the later years of our study, we decided to use a 14-year time period that allows us to capture the first FDI decisions of German firms in Eastern Europe after the fall of the Iron Curtain in 1990. Future research may gain additional insights by comparing the international expansion moves of firms from different countries as well as by using varying time frames for the analysis of FDI.

In addition, our theoretical models rely on simplifying assumptions concerning the firms' regional activity patterns. Although our theoretical models assume that firms either decide only to shift production without selling products in the host country in the case of efficiency-seeking FDI, or only to distribute their products in the host country from an own subsidiary while leaving all production activities in the home country in the case of market-seeking FDI, global firms often establish complex production and distribution networks around the globe. By relaxing some of our assumptions, future research may be able to provide a more detailed picture of FDI decisions.

Our study shows that both economic and institutional factors trigger FDI. However, we are not able to provide conclusive evidence on which of these two perspectives is a stronger

driver behind FDI. Although the firms in our sample seem to be strongly influenced by prior FDI decisions of large and successful peers, we cannot generalize this result. Eastern European markets show a considerably high risk, which dampens their overall attractiveness. Additionally, prior research shows that increasing levels of uncertainty enlarge a firm's tendency to engage in mimetic behavior (DiMaggio and Powell (1983)). Consequently, we may find a stronger impact of economic factors and a lesser impact of respective institutional factors in settings that are less risky, like FDI in the U.S. or in Central Europe. Future research may address this issue and may, for instance, analyze imitation under varying degrees of market uncertainty. Furthermore, research on FDI may profit from a qualitative approach to analyzing a firm's decision to enter foreign markets. Learning more about managements' reasons for or against investing in specific markets would help us to come to a more fine-grained understanding of the interaction between the economic and the institutional perspective on international expansion moves.

In our study, we analyze and compare the influence of some important aspects of the economic and institutional perspectives on FDI. We provide theoretical models on both perspectives and test them empirically by using longitudinal data on the decisions of German firms to invest in Eastern European markets. We show that the economic and the institutional perspectives complement each other in explaining FDI decisions of the firms in our sample. We assume that the joint explanatory power of both perspectives not only relates to FDI, but also to a number of further strategic decisions. Future research may well profit from including both theoretical perspectives simultaneously.

REFERENCES

- Agarwal, Sanjeev and Sridhar N. Ramaswami (1992), Choice of foreign market entry mode: Impact of ownership, location, and internalization factors, *Journal of International Business Studies* 23, 1-27.
- Aharoni, Yair (1966), *The foreign investment decision process*, Boston: Division of Research, Graduate School of Business Administration, Harvard University.
- Aitken, Brian, Gordon H. Hanson, and Ann E. Harrison (1997), Spillovers, foreign investment, and export behavior, *Journal of International Economics* 43, 103-132.
- Allison, Paul D. (1984), *Event History Analysis; Regression for Longitudinal Event Data*, Newbury Park, London: Sage Publications.
- Andersen, Otto (1993), On the internationalization process of firms: A critical analysis, *Journal of International Business Studies* 24, 209-231.
- Bandera, V. N. and J. T. White (1968), U.S. Direct Investment and Domestic Markets in Europe, *Economia Internazionale* 21, 117-133.
- Barkema, Harry G., John H. J. Bell, and Johannes M. Pennings (1996), Foreign entry, cultural barriers, and learning, *Strategic Management Journal* 17, 151-166.
- Benito, Gabriel and Geir Gripsrud (1992), The expansion of foreign direct investments: Discrete rational location choices or a cultural learning process?, *Journal of International Business Studies* 23, 461-476.
- Bikhchandani, Sushil, David Hirshleifer, and Ivo Welch (1998), Learning from the behavior of others: Conformity, fads, and informational cascades, *Journal of Economic Perspectives* 12, 151-170.
- Blonigen, Bruce A. (1997), Firm-specific assets and the link between exchange rates and foreign direct investment, *American Economic Review* 87, 447-465.

- Blonigen, Bruce A., Ronald B. Davies, and Keith Head (2003), Estimating the knowledge-capital model of the multinational enterprise: Comment, *American Economic Review* 93, 980-994.
- Braconier, Henrik, Pehr-Johan Norbäck, and Dieter Urban (2005), Multinational enterprises and wage costs: Vertical FDI revisited, *Journal of International Economics* 67, 446-470.
- Brainard, S. Lael (1993a), A simple theory of multinational corporations and trade with a tradeoff between proximity and concentration, Working Paper No. 4269, National Bureau of Economic Research.
- Brainard, S. Lael (1993b), An empirical assessment of the factor proximity explanation of multinational sales, Working Paper No. 3624-93-EFA, MIT, Sloan School of Management.
- Brainard, S. Lael (1997), An empirical assessment of the proximity-concentration trade-off between multinational sales and trade, *American Economic Review* 87, 520-544.
- Burns, Lawton R. and Douglas R. Wholey (1993), Adoption and abandonment of matrix management programs: Effects of organizational characteristics and interorganizational networks, *Academy of Management Journal* 36, 106-138.
- Carr, David L., James R. Markusen, and Keith E. Maskus (2001), Estimating the knowledge-capital model of the multinational enterprise, *American Economic Review* 91, 693-708.
- Caves, Richard E. (1971), International corporations: The industrial economics of foreign investment, *Economica* 38 (149), 1-27.
- Caves, Richard E. (2007), *Multinational Enterprises and Economic Analysis*, 3rd ed., Cambridge: Cambridge University Press.
- Chang, Sea-Jin (1995), International expansion strategy of Japanese firms: Capability building through sequential entry, *Academy of Management Journal* 38, 383-407.
- Chang, Sea-Jin and Philip M. Rosenzweig (2001), The choice of entry mode in sequential foreign direct investment, *Strategic Management Journal* 22, 747-776.
- Chen, Homin and Tain-Jy Chen (1998), Network linkages and location choice in foreign direct investment, *Journal of International Business Studies* 29, 445-467.
- Coughlin, Cletus C., Joseph V. Terza, and Vachira Arromdee (1991), State characteristics and the location of foreign direct investment within the United States, *Review of Economics and Statistics* 73, 675-683.
- Cyert, Richard M. and James G. March (1963), *A behavioral theory of the firm*, Englewood Cliffs: Prentice Hall.
- D'Arge, Ralph (1969), Note on customs union and foreign direct investment, *Economic Journal* 79, 324-333.
- Datta, Deepak K., Pol Herrmann, and Abdul A. Rasheed (2002), Choice of foreign market entry modes: Critical review and future directions, *Advances in International Management* 14, 85-153.
- Davidson, William H. (1980), The location of foreign direct investment activity: Country characteristics and experience effects, *Journal of International Business Studies* 11, 9-22.
- Delacroix, Jacques and Anand Swaminathan (1991), Cosmetic, speculative and adaptive organizational change in the wine industry: A longitudinal study, *Administrative Science Quarterly* 36, 631-661.
- Delios, Andrew and Witold J. Henisz (2000), Japanese firms' investment strategies in emerging economies, *Academy of Management Journal* 43, 305-323.
- Delios, Andrew and Witold J. Henisz (2003), Political hazards, experience, and sequential entry strategies: The international expansion of Japanese firms, 1980-1998, *Strategic Management Journal* 24, 1153-1164.
- DiMaggio, Paul J. and Walter W. Powell (1983), The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields, *American Sociological Review* 48, 147-160.
- Dunning, John H. (1981), *International production and multinational enterprises*, London: Harper Collings Publishers.
- Dunning, John H. and Sarianna M. Lundan (2008), *Multinational Enterprises and the Global Economy*, 2nd ed., Cheltenham: Edward Elgar.

- Froot, Kenneth A. and Jeremy C. Stein (1991), Exchange rates and foreign direct investment: An imperfect capital markets approach, *Quarterly Journal of Economics* 106, 1191-1217.
- Gimeno, Javier, Robert E. Hoskisson, Brent D. Beal, and William P. Wan (2005), Explaining the clustering of international expansion moves: A critical test in the U.S. telecommunications industry, *Academy of Management Journal* 48, 297-319.
- Goldsbrough, D. J. (1979), The role of foreign direct investment in the external adjustment process, *IMF Staff Papers* 26, 725-754.
- Graham, Edward M. (1974), Oligopolistic reaction and European direct investment in the United States, D.B.A. thesis, Harvard Business School.
- Graham, Edward M. (1978), Transatlantic investment by multinational firms: A rivalistic phenomenon?, *Journal of Post-Keynesian Economics* 1, 82-99.
- Gripsrud, Geir and Gabriel R. G. Benito (2005), Internationalization in retailing: Modeling the pattern of foreign market entry, *Journal of Business Research* 58, 1672-1680.
- Grubaugh, Stephen G. (1987), Determinants of foreign direct investment, *Review of Economics and Statistics* 69, 149-152.
- Guillen, Mauro F. (2002), Structural inertia, imitation, and foreign expansion: South Korean firms and business groups in China, 1987-95, *Academy of Management Journal* 45, 509-525.
- Gulamhussen, Mohammed Azzim (2004), Market entry of foreign banks under uncertainty: A real option theory approach, Working Paper, ISCTE Business School.
- Haunschild, Pamela R. Haunschild and Anne S. Miner (1997), Modes of interorganizational imitation: The effects of outcome salience and uncertainty, *Administrative Science Quarterly* 42, 472-500.
- Haveman, Heather A. (1993), Follow the leader: Mimetic isomorphism and entry into new markets, *Administrative Science Quarterly* 38, 593-627.
- Helpman, Elhanan (1984), A simple theory of international trade with multinational corporations, *Journal of Political Economy* 92, 451-471.
- Helpman, Elhanan (1985), Multinational corporations and trade structures, *Review of Economic Studies* 52, 443-457.
- Helpman, Elhanan and Paul Krugman (1985), *Market Structure and Foreign Trade*, Cambridge MA: MIT Press.
- Henisz, Witold J. and Andrew Delios (2001), Uncertainty, imitation, and plant location: Japanese multinational corporations, 1990-1996, *Administrative Science Quarterly* 46, 443-475.
- Hennart, Jean-Francois and Young-Ryeol Park (1993), Greenfield vs. acquisition: The strategy of Japanese investors in the United States, *Management Science* 39, 1054-1070.
- Hjerpe, Riitta and Jorma Ahvenainen (1986), Foreign enterprises and national control: The case of Finland since the end of the nineteenth century, in Teichova, Alice, Maurice Levy-Leboyer, and Helga Nussbaum (1986), *Multinational enterprise in historical perspective*, Cambridge: Cambridge University Press, 286-298.
- Hoetker, Glenn (2007), The use of logit and probit models in strategic management research: Critical issues, *Strategic Management Journal* 28, 331-343.
- Horst, Thomas (1971), The theory of the multinational firm: Optimal behavior under different tariff and tax rules, *Journal of Political Economy* 79, 1059-1072.
- Horst, Thomas (1972), Firm and industry determinants of the decision to invest abroad: An empirical study, *Review of Economics and Statistics* 54, 258-266.
- Hufbauer, Gary Clyde (1975), The multinational corporation and direct investment, in Kenen, Peter B. (ed.) *International Trade and Finance: Frontiers for Research*, Cambridge University Press, Cambridge.
- Hymer, Stephen H (1960), *The International Operations of National Firms: A Study of Direct Foreign Investment*, Cambridge MA: MIT Press, published in 1976.

- Ito, Kiyohiko and Elizabeth L. Rose (2002), Foreign direct investment location strategies in the tire industry, *Journal of International Business Studies* 33, 593-602.
- Johanson, Jan and Jan-Erik Vahlne (1977), The internationalization process of the firm – A model of knowledge development and increasing foreign market commitments, *Journal of International Business Studies* 8, 23-32.
- Jones, Ronald W. (1980), Comparative and absolute advantage, *Schweizerische Zeitschrift für Volkswirtschaft und Statistik* 116, 235-260.
- Katz, Michael L. and Carl Shapiro (1985), Network externalities, competition, and comparability, *American Economic Review* 75, 424-440.
- Kennedy, Peter (2003), *A Guide to Econometrics*, Cambridge MA: MIT Press.
- Kindleberger, Charles P. (1969), *American Business Abroad: Six Lectures on Direct Investment*, New Haven, CT: Yale University Press.
- Kinoshita, Yuko and Ashoka Mody (1997), Private and public information for foreign investment decisions, Working Paper, New York University.
- Kneller, Richard Kneller and Mauro Pisu (2007), Industrial linkage and export spillovers from FDI, *The World Economy* 30, 105-134.
- Knickerbocker, Frederick T. (1973), *Oligopolistic reaction and multinational enterprise*, Boston: Harvard University Press.
- Lin, Danyu and Wei Lee-Jen: 1989, The robust inference for the Cox proportional hazards model, *Journal of the American Statistical Association* 84, 1074-1078.
- Long, J. Scott (1997), *Regression Models for Categorical and Limited Dependent Variables*, Thousand Oaks, CA: Sage.
- Markusen, James R. (1984), Multinationals, multi-plant economies, and the gains from trade, *Journal of International Economics* 16, 205-226.
- Markusen, James R. (2002), *Multinational firms and the theory of international trade*, Cambridge, Mass: MIT Press.
- Markusen, James R. and Keith E. Maskus (2002), Discriminating among alternative theories of the multinational enterprise, *Review of International Economics* 10, 694-707.
- Markusen, James R. and Anthony J. Venables (2000), The theory of endowment, intra-industry and multi-national trade, *Journal of International Economics* 52, 209-234.
- Martin, Xavier, Anand Swaminathan, and Wil Mitchell (1998), Organizational evolution in the interorganizational environment: Incentives and constraints on international expansion strategy, *Administrative Science Quarterly* 43, 566-601.
- De Mooij, Ruud A. and Sjeff Ederveen (2003), Taxation and foreign direct investment: A synthesis of empirical research, *International Tax and Public Finance* 10, 673-693.
- Neary, J. Peter (1978), Short-run capital specificity and the pure theory of international trade, *Economic Journal* 88, 488-510.
- Porter, Michael E. (1998), Clusters and the new economics of competition, *Harvard Business Review* 76, 77-90.
- Ray, Edward John (1989), The determinants of foreign direct investment in the United States, 1979-1985, in: Feenstra, Robert Christopher (ed.) *Trade Policies for International Competitiveness*, Chicago: University of Chicago, 53-77.
- Rose, Elizabeth L. and Kiyohiko Ito (2008), Competitive Interactions: The international investment patterns of Japanese automobile manufacturers, *Journal of International Business Studies* 39, 864-879.
- Rothaermel, Frank T., Suresh Kotha, and H. Kevin Steensma (2006), International market entry by U.S. internet firms: An empirical analysis of country risk, national culture, and market size, *Journal of Management* 32, 56-82.
- Rugman, Alan M. (1980), *Multinationals in Canada: Theory, performance, and economic impact*, Lexington: Lexington Books.
- Rugman, Alan M. (1985), Internalization is still at general theory of foreign direct investment, *Weltwirtschaftliches Archiv* 121, 570-575.

- Rugman, Alan M. (1986), New theories of the multinational enterprise: An assessment of internalization theory, *Bulletin of Economic Research* 38, 101-118.
- Sanders, Wm. Gerard and Anja Tuschke (2007), The adoption of contested organizational policies: The emergence of stock option pay in Germany, *Academy of Management Journal* 50, 33-56.
- Scharfstein, David S. and Jeremy C. Stein, (1990), Herd behavior and investment, *American Economic Review* 80, 465-479.
- Schneider, Friedrich and Bruno S. Frey (1985), Economic and political determinants of foreign direct investment, *World Development* 13, 161-175.
- Shaver, Myles J. and Frederick Flyer (2000), Agglomeration economies, firm heterogeneity, and foreign direct investment in the United States, *Strategic Management Journal* 21, 1175-1193.
- Tan, Benjamin and Ilan Vertinsky (1996), Foreign direct investment by Japanese electronics firms in the United States and Canada: Modelling the timing of entry, *Journal of International Business Studies* 27, 655-681.
- Teece, David J. (1986), Transaction cost economics and the multinational enterprise: An assessment, *Journal of Economic Behavior and Organization* 7, 25-45.
- Terpstra, Vern and Chwo-Ming Yu (1988), Determinants of foreign investment of U.S. advertising agencies, *Journal of International Business Studies* 19, 33-46.
- Train, Kenneth E. (1986), *Qualitative Choice Analysis: Theory, Econometrics, and an Application to Automobile Demand*, Cambridge, MA: MIT Press.
- Veugelers, Reinhilde (1991), Location determinants and ranking of host countries: An empirical assessment, *Kyklos* 44, 363-382.
- Wheeler, David and Ashoka Moody (1992), International investment location decisions: The case of US firms, *Journal of International Economics* 33, 57-76.
- Yu, Chwo-Ming J. (1990), The experience effect and foreign direct investment, *Weltwirtschaftliches Archiv* 126, 561-580.
- Zaheer, Srilata (1995), Overcoming the liability of foreignness, *Academy of Management Journal* 38, 341-363.