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Meyer, Klaus E.

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Klaus E. Meyer

Center for East European Studies

Copenhagen Business School

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Center for East European Studies
Copenhagen Business School
Dalgas Have 15
DK-2000 Frederiksberg
Tel. (45) 38 15 30 30
Fax (45) 38 15 30 37

internet:
http://www.econ.cbs.dk/institutes/cees

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Klaus E Meyer[1]

ABSTRACT

The paper analyses empirically the determinants of international entry modes for the case of five transition economies in Central and East Europe. Four modes of entry are distinguished: trade, contracts, joint-ventures and direct investments. According to Hennart [1993], these modes should exhibit different degrees of internalization of the business transaction. This paper therefore, compares an ordered and a multinomial dependent variable model, and shows that the former disguises the richness of entry mode choices. Specific strategic objectives and environmental conditions require specific organizational forms, which make cooperative modes often the first choice.

The results furthermore show that the conditions of the international business environment, and specifically the transition economies, have major impact on the selection of entry modes. Environmental variables are more important than firm-specific variables in the empirical analysis.

Key words: Entry Modes, International Transaction Costs, Eastern Europe

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INTRODUCTION

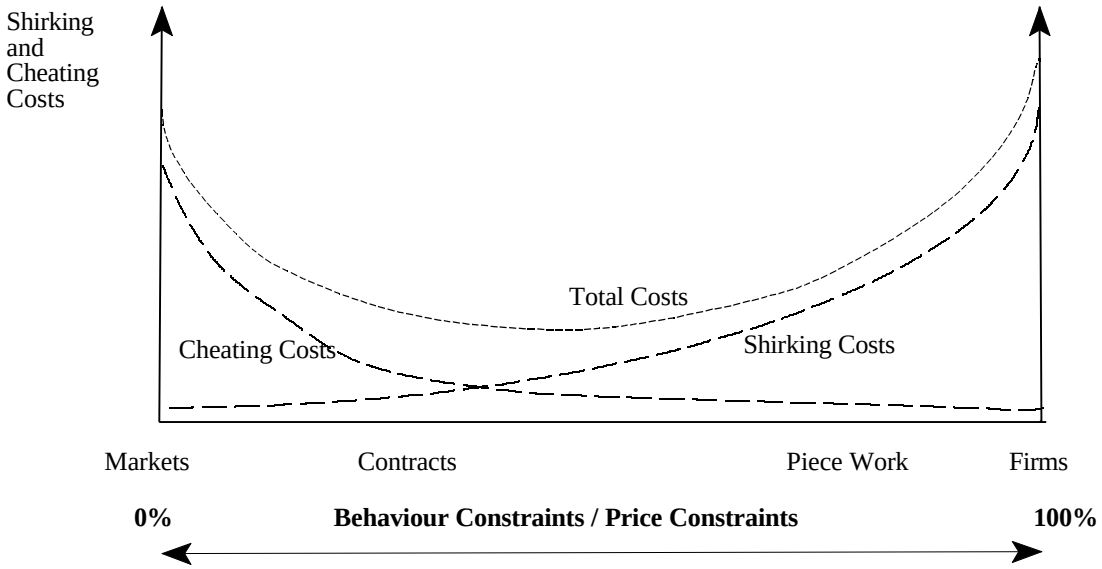
International business is subject to higher transaction costs than most domestic business, due to extensive imperfections on international markets. This makes the choice of an optimal organizational form a key issue in international business strategy. Firms have developed special modes to cope with international challenges. Firms entering a foreign market can choose among an array of possible organizational modes, including exports, contractual modes of coordination, and equity investment as joint- or wholly-owned ventures. These alternatives differ in the control that the entrant attains over the local operations, and have been analysed in the international business literature by applying transaction cost (TC) economics [e.g. Anderson and Gatignon 1986, Hennart 1991].

The TC literature distinguishes primarily between two alternative organizational forms, a market-mode using prices as coordination mechanism and an internal mode using hierarchy [cf. Williamson 1985]. Hennart [1993] argues that the main distinction between these modes is their ability to reduce shirking and cheating respectively. On this basis, markets and firms can be described as endpoints of a continuum, upon which contracts and JVs are intermediate forms combining elements of price and hierarchical coordination. However, other scholars consider a wider array of dimensions [e.g. Root 1987, Buckley and Casson 1996].

In the former central-plan economies in Central and Eastern Europe CEE, firms and foreign entrants face particularly high transaction costs during the process of transition from a central-plan system to a market economy due to, among other, an unstable institutional framework [Swaan 1997]. The nature of these TC, together with the fact that the region recently emerged as a major destination for international business [Brewer 1994, Meyer 1995, 1998, Kogut 1996], makes it region particularly interesting for research. Analysing business with CEE has the additional advantage that business with these countries is based on strategic decisions taken within five years prior to data collection. Thus, this study uses data of recent entries, and recently implemented corporate strategies.

The TC approach is applied to entry mode choice with two objectives. Firstly, TC arguments are tested in an under-researched business context. Secondly, the two alternative interpretations of different organizational forms are compared. The results challenge some transaction cost arguments. Environmental determinants appear more important than conventional firm-level variables. Furthermore, the ordinal approach is inferior to the multinomial model because it disguises the subtleties of entry mode choice. Therefore, the paper argues that the

Figure 1: The Internalisation Decision in Hennart [1993]



markets and hierarchies approach overly simplifies the diversity of international business modes.

TRANSACTION COSTS IN INTERNATIONAL BUSINESS

Markets and Hierarchies

Transaction cost economics describes markets and firms as alternative forms of organizing business transactions. If the conditions of the transaction are close to the assumptions of standard economics models of markets, then the transaction is coordinated through a price mechanism. However, if markets fail, e.g. due to information asymmetry or asset specificity, then the transaction may be internalized in a firm and coordinated by hierarchy [Williamson 1981].

However, the dichotomy of firms and markets is unsatisfactory to describe modes of modern business [e.g. Powell 1987, Stinchcombe 1990]. Therefore, Hennart [1993] uses the *methods of organizing* (price system and hierarchy) rather than the *economic institutions* (markets and firms) as basis for a TC model. In this approach, each organizational form is described by the combination of price and hierarchical mechanisms it employs to coordinate transactions.

Price systems indirectly control individuals by creating incentives to provide a revenue-maximizing quantity, and quality, of output. Hierarchies, on the other hand, control agents directly by imposing behavioural constraints. Under both regimes, agents may seek ways to reduce their

contribution. In a market, they may claim higher quality of the product and thus *cheat* their customer, while in a hierarchy, they may reduce their efforts below what they are instructed to provide, and thus *shirk* on their employer. For each transaction, the recipient thus has to measure quality of received products or to monitor their agents' efforts. These efforts, plus the losses resulting from undetected cheating or shirking, are TC of the chosen organizational mode. Hennart [1993] distinguishes them as *cheating costs* (for price systems) and *shirking costs* (for hierarchies).

Combining price and hierarchy mechanisms, Hennart presents a model that shows rising shirking costs, and falling cheating costs, along a scale from markets to firms (figure 1). The 'model locates contracts in the *continuum* between markets and firms, and defines them as consisting of limited behavior constraints within dominant price constraints' [Hennart 1993:545, emphasis added]. This combination of coordination mechanisms reduces the organizing costs for contractual cooperation.

Other scholars too treat contracts as an intermediate form along the continuum of internalization: Williamson [1991, p. 280] describes intermediate forms such as "various forms of long-term contracting, reciprocal trading, regulation, franchising and the like" as hybrid modes, "located between markets and hierarchies". Shelanski and Klein [1995, p. 337] review TC economics and state that "governance structures can be described along a spectrum." Also, the interpretation of outsourcing with long-term contracts as 'move-to-the-middle' by Clemons, Reddi and Row [1993] suggests an understanding of the market and firms as endpoints of a scale. Similarly, joint-ventures are described as cooperative modes in which control is shared by two or more parent firms who only partially internalize the operation [e.g. Beamish and Banks 1987, Jarillo 1988, Buckley 1997].

International Transaction Costs

In markets that cross international borders TC are higher than in most domestic transactions [Meyer 1998, Dunning 1998]. The costs of search, negotiation and enforcement increase due to influences specific to international business which are frequently related to less developed formal and informal channels of information exchange:

- The business partners are rarely embedded in common social networks that constrain

opportunistic behavior [cf. Granovetter 1985]. A damaged reputation abroad may matter less than in the local community because such information is not communicated efficiently between businesses in different countries.

- Business practices vary due to cultural differences, and due to path dependency of routines developed under different historical contexts.
- The partner specific investments in human capital, a major element of asset specificity [Monteverdi and Teece 1982, Anderson and Schmittlein 1984], are higher due to greater costs of acquiring tacit knowledge across geographical and cultural barriers. The costs of training local partners are particular high in countries with less sophisticated technological expertise.
- There is a greater likelihood of know-how diffusion, since licensors are less apt to observe and control the misuse of intellectual property and its externalities. The lack of familiarity with country specific legal procedures, combined with the fact that the legal system in some countries may be under-developed, gives rise to elevated costs in enforcing contracts in foreign courts. The 'appropriability regime' thus permits only weak enforcements of property rights and thus reduces transferors' ability to control externalities [Rugman 1981, Teece 1986].
- International business is subject to sources of uncertainty, such as exchange rates volatility and political regime changes, that do not exist in the domestic economy.

Suitably organized multinational enterprises can internalize cross-border transactions and thus overcome market imperfections. This internalization of transactions is the basic rationale for the existence of multinational firms [Caves 1971, Buckley and Casson 1976, Rugman 1981]. Yet, costs of managing hierarchies across borders are increased by the same factors. Therefore, specific organizational forms have been developed for international businesses that combine price and hierarchy mechanisms.

Modes of Entry

The basic forms of international market transactions are export and import. Goods leave or enter the sphere of influence of an exporter firm when handed over, possibly even before crossing the international border. The customer may organize logistics and distribution, often including

customs clearance,[2] and possibly also local packaging and other final stages of the product chain. To support local operations, the exporter may train local partners, but he cannot control the use of goods and know-how transferred.

Secondly, firms can sign a contract with a local partner to transfer goods or services in exchange for a fee or a share in revenues. A variety of international contracts have been employed, e.g. licensing of technology, franchising of a brand, subcontracting of labor intensive stages of a production chain, and management contracts for different types of transactions. The entrant can stipulate limitations on the use of goods and services transferred, and thus exert some degree of control over the local partner and use voice rather than exit strategies in the case of conflict. Typically, a strong foreign partner can gain some degree of control over a local partner in a less advanced economy by establishing a relationship where the latter is dependent upon foreign inputs [e.g. Contractor and Kundu 1998].

Formal control over the local operation is gained by forming a joint-venture (JV). Two or more partners cooperate by forming a venture in which they each hold equity and share revenues. It places the local business unit under the joint control of the legally independent local and foreign partners [e.g. Kogut 1988, Harrigan 1988, Parkhe 1991, Ramamanathan et al. 1997]. Through profit sharing, JVs create incentives to support the success of the venture, but they do not fully eliminate the incentives to shirk if one agent's benefit from shirking exceeds her share in profit foregone.

The partial internalization may create complex governance problems between the partners, notably if they enter the JV with different objectives. JVs are therefore avoided, unless specific conditions apply that lead to very high potential cheating costs in one or more of the markets concerned while at the same time inhibiting full internalization [Hennart 1988, Buckley and Casson 1988].

Finally, the entrant can obtain almost full control over the local operation by establishing a wholly-owned subsidiary (WOS) or branch. This integrates the foreign operation into the multinational enterprise and eliminates the need to accommodate the interests of a local partner.

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[2] The high 'inofficial' costs of ensuring smooth customs clearance in Russia and Ukraine [Kaufman 1997, Raiser 1997] induce many businesses to hand over goods before the border crossing, or to subcontract the transfer, including transport and customs clearance. Time spent waiting at the border, bribes to officials, or fees paid to consultants familiar with local procedures are alternative transaction costs facing the importer [Lambsdorff 1997], albeit with different legal and ethical implications.

Control may then only be limited by legal protection of local stakeholders, governmental interference or changes in the legal code.[3] As a trade-off, however, the investor then has to integrate a foreign business unit in its hierarchy and control potential shirking of employees in the foreign affiliate.

The alternative modes of international business vary in terms of their coordination through direct control or a price mechanism, and thus the potential shirking and cheating costs. Cooperative modes are governed neither by pure markets nor by hierarchies, but coordinated "through mutual forbearance" [Buckley and Casson 1988]. Prior literature focused on JVs, placed between licensing and wholly-owned operations [e.g. Contractor 1990, Kogut 1988] - as empirically confirmed by Chu and Anderson [1992]. The modes combine elements of price and hierarchy coordination in ways specifically adapted to international business. Applying the model by Hennart [1993], hypothesis 1 is thus proposed as follows:

H1: The four modes of entry can be described on an ordinal scale from market to internal coordination.

Challenges to the Continuum Model

The continuum model of organizational modes is challenged by scholars treating different modes as alternatives without implicit order. Buckley [1985:52] argues that "a simple spectrum running from wholly-owned foreign subsidiary to 'simple contracts' is an inadequate representation of the nuances and complexities of the different arrangements." Buckley and Casson [1996] show that licensing would be preferable in situations where high volatility combines with large market size. Licensing, as opposed to no business or WOS, is less attractive if patent rights are poorly protected or if the value of the technology is highly uncertain. Joint-ventures are less attractive for business across high cultural distance because of coordination problems. Root [1987] located exports and WOS at opposite corners of a box diagram with the dimensions 'risk' and 'control'. In this framework, contracts are characterized by zero risk and some degree of control. Also, the recent literature on strategic alliances [see Beamish and Killing 1997] commonly treats contractual modes underlying an alliance as distinct concepts rather than intermediates. These interpretations

[3] Examples may be social protection of employees that constrain lay-offs, and changes in customs or tax codes that affect the competitiveness of the business.

suggest applying a decision model that considers the four entry modes as independent of each other.

In economies in transition, additional factors may affect the mode choice. Entrants may, at least initially, not find suitable partners or firms to acquire and thus accept lower degrees of involvement. Greenfield investment may be too slow to achieve the desired strategic objectives, notably if firms pursue first-mover advantages.[4] Acquisition-opportunities are often dependent on the privatization process, which is highly politicized and subject to interference from various governmental agencies [Antal-Mokos 1998]. Organizational modes may therefore be very unstable, changing with the evolution of the environment as well as with the internationalization process of the entering firm [Johanson and Vahlne 1990, tested for transition economies by Engelhard and Eckert 1993]. Initially, investors may prefer joint-ownership to ease access to local institutions [e.g. Stopford and Wells 1972]. This is especially the case in Russia, where access to informal local networks appears vital for business success [e.g. Thornton and Mikheeva 1996]. Here, even 100% ownership may not give full control over an operation because of the weak institutional framework and a local culture that does not necessarily favor capitalist values.[5]

Hence the alternative to H1 is that environmental conditions require different modes of organization. For some transactions or environments, intermediate forms may best minimize TC, not because they minimize the sum of cheating and shirking costs, but because they can effectively deal with specific kinds of TC.

Transaction Costs in Transition Economies

Transaction costs are particularly high in Central and Eastern Europe during the process of economic transition. With the dissolution of the central-plan, administrators became economic agents. The old economic system disintegrated before the institutions supporting the new market system could be created. Managers had to act on markets that did not yet exist; they lacked both the (tacit) knowledge on how to use the market mechanism and the market knowledge about potential partners and competitors. As agents without experience on the market, they have to

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[4] First-mover advantages were perceived to be very important among early investors in the transition economies after 1989 [Lankes and Venebles 1996, Estrin and Meyer 1998].

[5] Discrepancies in ethics and culture that inhibit the introduction of capitalism in Russia, have been shown by Puffer and McCarthy [1995]. See also the literature on Russian business culture, e.g. Holden et al. [1998], Vlachotsicos [1998].

identify potential types of business and the preferences of potential business partners; and they have to learn to assess the composition of demand and supply, notably to estimate demand elasticity [Swaan 1997]. Thus, agents engage in considerable search processes to set up transactions and to find the right prices. The TC of this search inhibit many potential transactions. TC are further increased by lack of information, accounting and legal-enforcement systems. Information asymmetries and opportunities for opportunistic behaviour galore. In most parts, the transition economies lack middle-class social networks that can reduce TC through social embeddedness and mutual trust. Old networks have often been destroyed by the revolutionary changes in 1989/90, or they have been converted to ease insider deals and corruption.

Western businesses entering the transition economies have superior experiences in the use of markets. However, they too face high TC. Their transactions are affected by lack of information about their partners;[6] by complex negotiations with partners inexperienced in business negotiations [Antal-Mokos 1998]; by an unclear regulatory framework and an inexperienced bureaucracy [e.g. Thornton and Mikheeva 1996]; and by the underdeveloped court system. This weak institutional framework implies that cheating costs are potentially high.

The reaction, from a TC point of view, would be to internalize the business transaction. However, shirking costs are also high. The central-plan regime was based on a hierarchy in the whole economy that established quantitative output targets with few incentives to provide quality and customer service. Workers and managers have thus developed considerable experience in shirking, and the underlying routines and attitudes persist in the transition [e.g. Sztompka 1993, Leitzel 1997]. Furthermore, foreign investors wishing to establish a wholly-owned operation could often only do so through an acquisition in the privatization process. This, however, requires complex negotiations with governmental authorities [e.g. Brouthers and Bamossy 1997] as well as involvement in the process of enterprise restructuring [e.g. World Bank 1996]. Post-socialist firms need major changes not only in corporate strategy, but in the organizational structure and culture [e.g. Newman 1998, Meyer and Bjerg-Møller 1998]. Often, investors are also expected to assume financial and environmental liabilities of the acquired firm. Thus, the costs of setting up an efficient local operation are very high. These TC are declining as the transition progresses and the institutions for a market economy are established. Yet, at the time of data collection they

[6] This includes obstacles related to lack of formal systems providing information, such as audited company accounts, but also lack of track records of firms in fulfilling contractual obligations with respect to, e.g., product quality and just-in-time delivery.

were still of major concern. We therefore expect that the high costs of shirking and of re-organization outweigh the potentially high cheating costs. The advance in economic transition is measured by a composite index TRANSITION based on the transition indices published by the EBRD [1997] and predicted to permit higher degrees of internalization:

H2: Investors abstain from wholly owned operations in the less advanced transition economies.

Progress in transition implies that the economic structure of host economies is becoming more similar to Western economies. This is one aspect of '*psychic distance*', which covers geographic, cultural, legal, religious, linguistic, historical, economic and ethnic aspects of the differences between two locations of business activity [Johanson and Wiedersheim-Paul 1975]. Costs of business increase with rising psychic distance between host countries and the environment in which the firm is used to operate. Establishment of a business in a distant country requires to gathering information, training local staff and adapting management to the local culture and legal environment. Understanding of other cultures requires extra effort that is often not undertaken, so that cultural distance also becomes a constraint on rationality. Risk assessment is hampered because the investor is not accustomed to the nature of many sources of risk and because of political influences on trans-border transactions [Caves 1996].

Psychic distance increases TC of both hierarchies and markets. Shane [1994] argues that psychic distance reduces trust which especially inhibits the formation of hierarchies [also see Root 1983, and Davidson and McFetridge 1985]. Furthermore, distance increases the costs of organizational learning that affects especially JVs and acquisitions [Kogut and Zander 1993, Barkema et al. 1996]. Thus, the greater the psychic distance, the greater would be the preference for external modes.

Therefore, psychic distance reinforces the effect of progress in transition as less reformed economies require more adaptation to the local environment. In addition, we predict differences between the two source countries in our sample. Compared with the British, German firms are not only geographically closer to CEE, they also benefit from more personal relationships and traditionally more intensive trade relations. Their proximity should lower their costs of

internalizing business.[7] This is tested by introducing a dummy variable GERMAN that takes the value of one for German firms:

H3: German firms are in closer psychic proximity to transition economies and thus more likely to internalize operations.

Internalization Incentives

The propositions motivating further variables in the empirical model are adapted from related earlier studies. Therefore, they are introduced only briefly, and with respect to specific features of international business with the transition economies.

A major cause of market failure is asymmetric information on properties of the product to be transferred [Arrow 1971]. Related phenomena are externalities from the "public good character of knowledge within the firm" [Caves 1971:4], and the free-rider potential for users of brand-names who may degrade the quality of products [Davidson 1982, Anderson and Gatignon 1986]. These properties of knowledge inhibit the use of contracts for its transfer. Therefore, international business scholars such as Buckley and Casson [1976], Rugman [1981], and Casson [1995] argue that information asymmetries and related market failures are a (or the) rationale for the existence of multinational enterprises. Consequently, the next hypothesis is:

H4: Firms potentially subject to information asymmetry are more likely to internalize downstream business rather than use contracts.

Information asymmetries arise especially for firms with knowledge-based assets. Technology intensive industries face information asymmetries in the transfer of production technology, in uncertain assessment of market opportunities for innovative products, in the necessary feedback from sales to product development, as well as in the training-needs of sales and service personnel. Businesses employing other highly qualified human-capital, such as finance and marketing, also

[7] Empirical studies found that long distance favors low involvement modes. Davidson and McFetridge [1985] find countries bordering the US (their country of origin) receive more direct investment relative to licensing. Also Gatignon and Anderson [1988] find more direct investment in countries within the Anglo social-cultural sphere. Gomes-Casseres [1989] finds that wholly-owned ventures were more likely in familiar countries.

require an extensive exchange of information. Technology intensity is proxied by R&D expenditures over turnover (R&D), and human capital intensity by personnel costs per employee (HUMAN_CAP).[8] Furthermore, the marketing and distribution of consumer goods is information-intensive. The units coordinating local marketing exchange sensitive marketing information with headquarters. Moreover, control of product quality is essential to maintain the reputation of a worldwide brand. Therefore, manufacturers of consumer goods (CONSUM_G) are more likely to internalize at least part of their local distribution.

In addition to properties of the firm, we test the hypothesis for characteristics of the actual transaction - the level of analysis on which TC economics focuses. Respondents in our survey reported the incidence of transfer of technological and of managerial know-how, both of which are expected to increase the likelihood of internalisation. The dummy variables are called T_TECHN and T_MANAGM.

Organizational Capabilities

Finally, organizational capabilities determine the (opportunity) costs of internalization [Demsetz 1988]. Firms with related experience and economies of common governance can organize a given transaction at lower costs [Gomes-Casseres 1989, Dunning 1993]. These resource-based effects are particular relevant for international business because it involves a major fixed cost component. Larger firms can use economies of scale and of common governance because the per unit internal TC decline with increasing turnover. In addition, common governance allows the use of headquarter-resources for several international operations. Therefore, large firms are more likely to engage in direct investment because the marginal costs of adding a new operation are lower, and because they have better possibilities to leverage investment risk [e.g. Agarwal and Ramaswani 1992].

In addition, costs of entry involve country-specific sunk costs, which are incurred upon entering a foreign country and not recoverable in case of withdrawal. Investors need to study the legal, social and economic framework and to establish contacts with local partners and government authorities. Goods have to be adapted to local tastes, legal requirements and the specific properties of inputs. This implies, that subsequent transactions have lower set-up costs,

[8] R&D intensity is commonly found significant in tests of transaction cost propositions [e.g. Davidson and McFetridge 1985, Gatignon and Anderson 1988, Denekamp 1995, but not Hennart 1991]. The human capital proxy is based on a similar logic but on a broader concept of knowledge.

and thus are more likely to be internalized. Furthermore, experienced investors are more able to assess the investment risk [Aulakh and Kotabe 1997] and are better prepared to re-invest [Mudambi 1998]. Therefore, firms with related activities and experiences in the country, and firms with expertise in international business at large, are more capable of managing internalized forms of business:

H5: Firms that have related experiences or can use economies of common governance are more likely to internalize their business.

The effects of firm size as well as international and regional experience are considered.[9] Firm size (SIZE) is proxied by its employment. Experience is gathered through global production, proxied by the share of employment outside the home country (GLOBAL) and through business operations in the region, which is proxied by the share of turnover in Central and Eastern Europe in total sales (CE_EUROPE).

Some control variables are required. To test the effect of research intensity, we found it necessary to control for the pharmaceuticals industry (PHARMA). This particular industry has high R&D ratios, but its know-how is, at least in transition countries, more codifiable when new products are brought to the market. Pharmaceuticals can only be sold if they pass lengthy approval procedures that follow patenting. Furthermore, the industry is highly dependent on government policy since the health sector, its predominant customer, is a highly regulated service. Therefore, investment may be primarily determined by the outcomes of government-industry negotiations.[10]

Another necessary dummy is for firms affiliated to non-European parents (NONEUR). Furthermore, dummies are added for the different kinds of transactions included in the sample. Downstream, market-oriented, business is used as base case, and dummies are added for upstream business (UPSTREAM) and business with both upstream and downstream operations (UP&DOWN). The different kinds of goods transferred are controlled for with dummies for final

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[9] Experience and common governance effects cannot be separated by proxies: A firm with extensive international business has both experience in such business and can use headquarter functions for multiple business activities.

[10] The need to include PHARMA was indentified after obtaining peculiar results without it, see results section.

goods only (T_O_FIN), final and other goods (T_FIN_ETAL), and for market seeking business with only knowledge transfer (T_NONE). Table 1 summarizes the hypotheses, proxies and the expected signs on WOS.

Table 1: Hypotheses, Variables and Correlations

Hypothesis	*Variables*	*Expected Sign*	*Level of analysis*
H2: Progress in transition	TRANSITION	+	host country
H3: Distance	GERMAN	+	firm
H4: Information	R&D,	+	firm
	HUMAN_CAP	+	firm
	CONSUM_G	+	firm
	T_MANAGM	+	observation
	T_TECHN	+	observation
H5: Experience & common governance	SIZE	+	firm
	GLOBAL	+	firm
	CE_EUROPE	+	firm
Control variables	PHARMA	-	firm
	NONEUR	**?**	firm
	T_FIN_ETAL	+	observation
	T_O_FIN	**?**	observation
	T_NONE	**?**	observation
	UPSTREAM	**?**	observation
	UP&DOWN	+	observation

EMPIRICAL ANALYSIS

Most empirical studies of entry modes focus on dichotomous choices [e.g. Davidson and McFetridge 1985, Gomes-Casseres 1989, Hennart 1991]. Recent studies integrate three modes with different coordination mechanisms in one analysis. Gatignon and Anderson [1988], Kim and Hwang [1992] and Agarwal and Ramaswani [1992] use multinomial models to analyse the determinants of joint-ventures. Aulakh and Kotabe [1997] present an extended analysis of direct exports, wholly-owned subsidiaries and an intermediate construct. This paper extends this empirical research by analysing a broader choice of entry modes: international trade, contractual arrangements, JVs and wholly-owned subsidiaries. The mode of business is a categorical variable defined as follows:

(1) MODE = 3 if the business relationship involves only trade

= 2 if the business relationship involves contracts, but no direct investment

= 1 if the firm has established a joint-venture (JV), but no wholly-owned operation

= 0 if the firm has established a wholly-owned subsidiary (WOS).

WOS is chosen as a base case to observe directly the variation for higher degrees of internalization. Following the intermediate-form interpretation of contracts and joint-ventures, MODE should have an ordinal scale. It is thus estimated with an ordered categorical data model, i.e. an ordered logit. Alternatively, an independent multiple choice approach is tested using a multinomial logit. The two empirical models are compared to assess the suitability of the continuum model (H1), similar to the test by Chu and Anderson [1992] for a different set of entry modes.

The data-set for the analysis is based on a recent questionnaire survey sent to 677 West German and British companies in winter 1994/1995, after having tested it in interviews and in a pilot study [Meyer 1998]. The questionnaire was sent to key informants in the companies to minimize information bias. The companies were selected randomly from a database (Amadeus) of all firms in three broadly defined industries: food and beverages, chemicals, and engineering. 269 firms replied (39%) and reported their business with five countries: Czech Republic, Hungary, Poland, Russia, and Rumania. The return includes firms without business contacts in the region as, *ex ante*, it was not known whether or not the firms were active in CEE. The variation across various categories (e.g. size, industry, advertising expenditures) was low, suggesting that the non-response bias is small. From the survey, 656 observations of active business relationships of either mode in any of the five countries were obtained. Of these, 576 were used in the empirical analysis after eliminating missing values.

Table 2: Ordered Model

GERMAN	-0.122 (0.275)
TRANSITION	**-1.488 (0.304)******
R&D	**-0.078 (0.030)*****
HUMAN_CAP	**-0.029 (0.012)****
CONSUM_G	**-0.483 (0.258)***
T_TECHN	**-0.974 (0.284)******
T_MANAGM	**-2.056 (0.227)******
SIZE	-0.732 (0.580)
GLOBAL	**-1.669 (0.431)******
CE_EUROPE	-3.780 (4.149)
PHARMA	1.740 (0.455)****
NONEUR	0.392 (0.326)
T_O_FIN	-0.243 (.275)
T_FIN_ETAL	-1.223 (.391)****
T_NONE	-1.530 (0.416)****
UPSTREAM	0.419 (0.557)
UP&DOWN	1.757 (0.571)***
μ_1	0.654 (0.102)****
μ_2	1.798 (0.156)****
Constant	10.587 (1.269)****
model χ^2	375.49
log-likelihood	-484.111
restr. log-likel.	-671.855
ρ-statistic	27.94%
Correct predictions	69.79%

Levels of significance: * = 10%, ** * 5%, *** = 1%, **** = 0,5 %
Negative sign = preference for WOS

Frequencies of actual & predicted outcomes

	Predicted				
Actual	0	1	2	3	TOTAL
0 (WOS)	**120**	0	0	31	151
1 (JV)	32	**0**	0	11	43
2 (contract)	27	0	**0**	57	84
3 (trade)	16	0	0	**282**	298
TOTAL	195	0	0	381	576

Table 3: Multinomial Model

	WOS vs. JV	*WOS vs. contracts*	*WOS vs. Trade*
GERMAN	**-1.150 (0.638)***	**-2.899 (0.540)****	**-0.847 (0.504)***
TRANSITION	**-2.650 (0.675)****	**-2.036 (0.578)****	**-2.692 (0.521)****
R&D	-0.059 (0.082)	-0.045 (0.056)	**-0.123 (0.490)****
HUMAN_CAP	-0.012 (0.027)	-0.011 (0.024)	**-0.035 (0.018)***
CONSUM_G	-0.139 (0.473)	-0.395 (0.431)	**-0.746 (0.384)***
T_TECHN	0.704 (0.468)	0.074 (0.456)	**-1.630 (0.506)****
T_MANAGM	0.034 (0.500)	**-2.091 (0.410)****	**-3.222 (0.387)****
SIZE	-1.017 (1.088)	**-2.051 (0.946)****	-1.166 (0.885)
GLOBAL	**-2.728 (0.890)****	**-2.324 (0.733)****	**-2.850 (0.685)****
CE_EUROPE	-11.064 (8.874)	-7.168 (7.15)	-9.634 (6.232)
PHARMA	0.241 (1.019)	1.369 (0.790)*	2.994 (0.688)****
NONEUR	-1.801 (0.885)**	-1.157 (0.601)*	0.634 (0.524)
T_O_FIN	-2.510 (.623)****	-1.549 (0.552)***	-1.283 (0.524)**
T_FIN_ETAL	-2.558 (.723)****	-2.703 (0.707)****	-2.731 (0.673)****
T_NONE	-1.305 (0.710)*	-2.330 (0.784)****	-3.995 (0.865)****
UPSTREAM	0.324 (1.581)	1.248 (1.352)	1.776 (1.296)
UP&DOWN	0.686 (1.585)	- 0.871 (1.383)	-3.803 (1.333)****
Constant	12.150 (2.706)****	12.422 (2.378)****	17.024 (2.185)****
model χ^2	536.16 (51)	correct predictions	73.78%
log-likelihood	-403.775	ρ-statistic	39.90%
restr. log-likel.	-671.855	χ^2-test of IIA	24,199 (54)

Levels of significance: * = 10%, ** = 5%, *** = 1%, **** = 0,5 %
Negative sign = preference for WOS

Frequencies of Actual and Predicted Outcomes

	Predicted				
Actual	0	1	2	3	total
0 (WOS)	**118**	1	5	27	151
1 (JV)	16	**14**	5	8	43
2 (contract)	15	3	**21**	45	84
3 (trade)	19	1	6	**272**	298
Total	168	19	37	352	576

ORDINAL VERSUS MULTINOMIAL MODEL

First, the ordered model is introduced and assessed against the multinomial model. The latter should be adopted if reasonable doubts persist about the restriction, i.e. the assumption of an ordinal relationship, in the more parsimonious ordered model. Since no formal test for categorical dependent variables exists to prove the ordinal nature of the scale, we discuss four complementary criteria.

DeMaris [1992] suggests, based on Hosmer and Lemeshow, the 'ρ-statistic', an R^2-type measure for logistic regression, to compare different models.[11] Secondly, the correct predictions by the models are compared considering both the overall percentage and the predictions for each of the alternative choices. A third criterion that the coefficients in the multinomial logit are consistent with the assumption of an ordinal dependent variable. If contracts are of intermediate order, then the signs of coefficients for the choices between trade and contracts, and contracts and WOS should be the same. Finally, the assumption of the multinomial logit that the choices are independent, i.e. the 'independence from irrelevant alternatives' (IIA), can be tested with a special χ^2-test.

The results of the ordered model are reported in table 2.[12] With an assumed ordinal relationship one coefficient is estimated for each variable, plus the two parameters μ_1 and μ_2. The overall contribution of the models is highly significant, as indicated by high χ^2-statistics. Many coefficients are significant and signed as hypothesized. Apparently, the model gives strong support to hypotheses H2, H4 and H5. However, does this model give a sensible depiction of the underlying organizational choices? Table 3 presents the results of the more differentiated multinomial model.

The model statistics are reported at the bottom of the tables. The ρ-statistic is substantially higher for the multinomial model (ρ=39.9%) than for the ordered model (ρ=27.9%), indicating a better explanation of the underlying variation. The proportion of correct predictions is high in all cases, and slightly better for the multinomial model. The aggregate figures, however, disguise

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[11] $\rho = (-2\log L_0 - (-2 \log L_1)) / (-2\log L_0)$, where L_0 stands for the restricted log likelihood for slopes = 0, and L_1 for the log likelihood of the model. Chu and Anderson [1992] propose a similar measure, the Akaike-Likelihood-Ratio index, which uses the log-likelihood of the equal probabilities model rather than the restricted log-likelihood as base.

[12] The models are estimated using the maximum likelihood procedure provided by LIMDEP. The regression coefficients ß estimate the change in the log odds ratio between any pair of two alternatives. The logit regression routine provides ß's for the base choice versus other alternatives [see DeMaris 1992 or Greene 1993 for the method]. The results are reported for the choice of WOS over the other modes, i.e. a negative coefficient indicates a relative preference for WOS. The coefficient on choices between other modes are obtained by taking the differences of the two coefficients.

that the ordered model fails to predict a single incidence of a contract or a JV. It merely separates well the endpoints of the scale, trade and WOS. The multinomial model predicts 14 of 43 JVs and 21 of 84 contracts correctly.

Table 4: Implied Preference of the Multinomial Logit Models

	(1) *implied preference*	*(2)* *W>J>C>T*	*(3)* *W>J>C*	*(4)* *W>J/C>T*	*(5)* *W>C>T*
GERMAN	W > T > J > C	-	yes	-	-
TRANSITION	W > C > J > T	-	-	yes	yes
R&D	W > C > J > T	-	-	yes	yes
HUMAN_CAP	W > C > J > T	-	-	yes	yes
CONSUM_G	W > J > C > T	yes	yes	yes	yes
T_TECHN	J > C > W > T	-	-	-	-
T_MANAGM	J > W > C > T	-	-	-	yes
SIZE	W > J > T > C	-	yes	-	-
GLOBAL	W > C > J > T	-	-	yes	yes
CE_EUROPE	W > C > T > J	-	-	-	yes
correct order:		1	3	5	7

Abbreviations: C = contracts, J = joint-ventures, T = trade, W = wholly owned subsidiaries.
Note: > = preferred to.

Furthermore, the pattern of coefficients in the multinomial model should match with the premises of the ordered model. However, table 4 shows that this is not so: the predicted order of preferences emerges for only one of 10 hypothesized variables (column 2). Omitting trade from the model (column 3) does not give much more support to the continuum approach either. A weaker version of the hypothesis, which does not distinguish between JVs and contracts, receives better support (column 4). Only if JVs are excluded from the analysis (column 5), then the evidence looks more favourable by the criterion of consistent coefficients. Overall, however, this criterion thus does not lend convincing support to the ordered model.

Finally, a test of the underlying assumption of independence of irrelevant alternatives (IIA) verifies the suitability of the multinomial logit. The χ^2-test statistic for the null hypothesis of independence is insignificant at $\chi^2 = 24.2$ with 54 degrees of freedom, giving no argument to reject the assumption.[13]

In conclusion, all four criteria - consistency of the coefficients, predictive ability, ρ-ratio,

[13] For technical details of this test see the appendix

and IIA-test - suggest rejecting the ordered in favor of the multinomial model. Thus, the assumption that the categorical variable MODE has an ordinal scale should be rejected! This in turn implies that the markets-to-hierarchies scale in Williamson [1991] and Hennart [1993] should be rejected. Cooperative modes are unsatisfactorily described as intermediate form between markets and hierarchies.

RESULTS OF THE MULTINOMIAL MODEL

Having rejected the ordered model, the multinomial model, as the more general model, is used to assess hypotheses H2 to H5. The highly significant coefficients on TRANSITION support H2, suggesting that progress of economic transition increases firms' preference for internalization. Business in the advanced transition economies is most likely to be in form of WOS, with small differences between other modes. GERMAN firms prefer WOS, as suggested in H3, especially compared to contractual modes. This effect is disguised by the ordered model. The German firms have, relative to British firms, a particular aversion against contracts and, to a lesser extent, JVs. This may be because cooperative modes are used for entry in distant countries where direct investment becomes prohibitively expensive. Trade is less affected by psychic distance because it requires less interaction with the local economy. Since international corporate strategies are grounded in the investor's home environment, the entry mode choice may also be subject to other specific influences originating in the particular home country environment.

The three firm-level variables associated with information intensity, R&D, HUMAN_CAP and CONSUM_G have the predicted negative coefficients on WOS in all columns (H4), but they are significant only in relation to trade.[14] In the ordered model, the R&D coefficient is significant, suggesting that R&D intensity encourages internalization. Yet, the multinomial model shows that this significance is based mainly on the difference between trade and the other modes.[15] Thus, R&D intensive firms have a higher propensity for complex projects, but not necessarily for their internalization. Contracts, JVs and WOS appear equally suitable for the transfer of knowledge, despite their different control mechanisms and sensitivity to information asymmetry.

The actual transfer of knowledge leads to higher degrees of control than trade, but the pattern between those modes is not in line with the hypothesis. Management know-how

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[14] Note that pharmaceuticals companies significantly abstain from WOS. The regressions were also run without the PHARMA dummy which frequently returned significant reverse coefficients of the R&D variable. This can be explained by the behavior of pharmaceuticals companies, which enter CEE with relatively mature products.

[15] Aulakh and Kotabe [1997] find a similar inconsistency of coefficients for their asset specificity measure.

(T_MANAGM) is, as predicted, transferred in WOSs and JVs, but not via contracts or trade. However, technology transfer (T_TECHN) is surprisingly associated more with JVs than with WOSs, though not significantly.

The choice between WOS and JV is not significantly influenced by any of the information-related variables, and vis-a-vis contracts only T_MANAGM is significant. Thus, the results cannot establish a positive association of information intensity with higher degrees of internalization, as coefficients are signed correctly but insignificant. Yet, international trade is undertaken by firms less sensitive to information asymmetries, and is less likely to involve know-how transfer.

Firms with extensive business worldwide prefer WOS to all other forms of business. The coefficients on GLOBAL have the predicted signs and are highly significant, while differences between other modes are minor. This supports H5: experience and common governance of worldwide business reduce the costs of internal organization of the new operation, and thus favor internalization. However, firm size (SIZE) only favors WOS vis-a-vis contracts, also an effect disguised in the ordered model. This shows that contracts are used in particular by smaller firms. Region-specific experience (CE_EUROPE) does not show any significant effects due to high standard errors in this regression analysis.[16]

The NONEUR dummy shows a preference of firms with non-European parents for trade or WOS. This pattern is partly significant, and reflects that the scale of their worldwide operations is not appropriately represented in the accounting data for the UK or German affiliate in the sample. The activity dummies were expected to be positive whenever they proxy more interactions between the parent firm and the country. The transfer of final goods, with (T_FIN_ETAL) or without transfer of other goods (T_O_FIN), leads to more internalization as does the combination of business with both up- *and* downstream components (UP&DOWN). However, firms only sourcing from the region (UPSTREAM) show a relative preference for less internalization.

Overall, strong support emerges for the positive impact of transition, distance, and experience and common governance effects on the propensity of internalization. The information variables receive some support for the choice of WOS over trade. Yet, support is weak for the hypothesized positive relationship between information intensity and the choice of WOS over contracts or JVs.[17]

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[16] However, it is significant at 5% or 10% level in various analyses that I did on subsamples e.g for British firms and for business with the advanced transition economies.

[17] This study differs geographically from earlier research, which may account for some differences. Most prior research focuses on WOS in the USA or by US firms. It is therefore possible that American culture

INTERPRETATION

The cooperative modes appear, for some businesses, superior to both trade and WOS. They are insufficiently characterized as a mix of price and hierarchical coordination as suggested by Hennart [1993]. Certain influences affect particular modes and are not captured by the dimensions of price and hierarchy, or the concepts of shirking and cheating costs. Contracts can be designed to overcome specific forms of market failure such as an ambiguous legal framework. Hierarchies may normally overcome market failure, but they may be inefficient in dealing with specific conditions, such as the enterprise transformation process in transition economies. Therefore, the use of the ordered model can lead to inappropriate inferences, as for the R&D and GERMAN variables in this paper.

How can this insight be integrated with the model presented initially? Certain costs do not increase monotonously over the range from markets to firms, but have an U-shaped or inverse-U-shaped pattern.[18] Figure 2 illustrates such a possibility. For instance, the costs of communication with the foreign unit, per unit of sales, may be higher for small businesses that find it expensive to establish an internal cross-national communication system, and thus prefer external modes. Increasing business volume reduces the *per-unit* communication costs. However, the need to communicate with a contractual partner does not decline to the same extent because potential gains from cheating increase with business volume. Hence, contracts are more common for low volume business. This provides a *possible* explanation for the pattern observed: The empirical results suggest that contracts are more common for the distant British businesses (who are less active in CEE), and for small firms.

The results furthermore suggest that knowledge intensive firms (R&D, HUMAN_CAP, CONSUM_G) face the main differences between costs of exports and the other modes. The interaction with local partners may be important for them because feedback from partners contributes to product development and customization. Apparently, such coordination can equally well be accomplished through cooperative modes as through wholly-owned local businesses. For instance, turnkey projects and franchising permit deep involvement without equity investment.

These are possible explanations for the patterns observed in the empirical analysis. The general insight is that different modes of business have specific properties that enable them to

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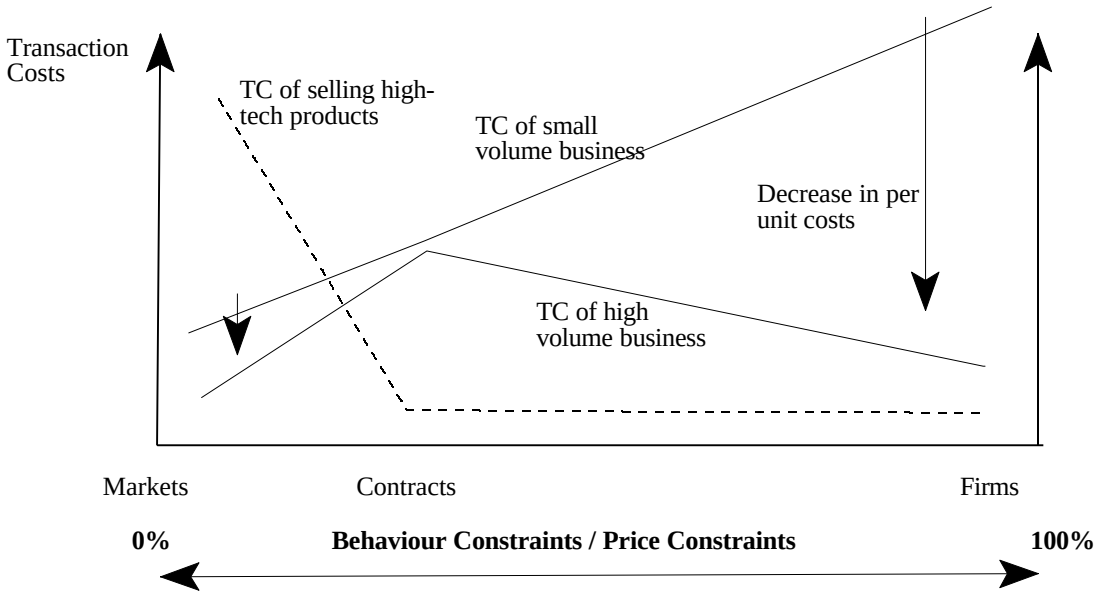
has dominated empirical research. Davidson and McFetridge [1985], Gatignon and Anderson [1988] and Gomes-Casseres [1989] all used the 'Harvard MNE project database' of US outward WOS. Interestingly, Hennart [1991] found no support for the R&D hypothesis in Japanese WOS. In results not detailed here, I found more favorable evidence for TC in the British sample that is culturally closer to the USA.

[18] see Contractor (1990) for a similar argument.

Figure 2: The Internalisation Decision with non-monotonous costs.



cope with particular kinds of TC emerging in certain environments. TC of alternative business modes are only partly determined by the use of price and hierarchical coordination. Contractor [1990], discussing joint-ventures, goes one step further to argue that even sales revenues may have an inverse-U shape relation because of synergy effects of joint-activity.

CONCLUSIONS

The empirical results point to two aspects of mode choice that are not captured by conventional TC models. First, cooperative modes, such as contracts and JVs, can cope with certain types of TC, and serve special purposes, that are not captured by Hennart's [1993] model. Secondly, environmental features, such as the international business context and economic transition, have a major impact on the choice of organizational form.

The markets-and-hierarchies approach overshadows the subtleties of alternative transaction modes. It has to be extended to consider more dimensions, such as risk exposure [Root 1987] or volatility and business volume [Buckley and Casson 1996]. Cooperative modes may be first choice to fulfill certain context-specific purposes. This paper argued that influences may arise from the specific challenges of the international environment and of the transition economies. This leads to corporate strategies such as organizational learning [Kogut 1988, Kogut and Zander 1993], formation of strategic alliances [e.g. Beamish and Killing 1997] and speedy market entry [Estrin and Meyer 1998] for which cooperative modes appear cost-efficient.

However, they are inherently instable because these purposes often require only a

temporary operation, or modes are adjusted to changes in the environment [e.g. Harrigan 1988]. Especially in transition economies cooperative modes are often transitory [Hagedorn and Sadowski 1999] as agents react to a rapidly evolving environment. TC economics, as a static theory, is not well suited to capture these dynamics.

In transition economies, cooperative modes are chosen to cope with specific TC that arise e.g. due to information asymmetries, underdevelopment of the legal system, and costs of acquiring and restructuring post-socialist firms. Organizational innovations adjust entry strategies to these specific needs. For instance, Thornton and Mikheeva [1996] found that American businesses in Russia use in particular two strategies to protect themselves: they place great emphasis on seeking out a partner's reputation and they employ self-enforcing contracts.

In consequence, further theoretical research should include more dimensions in the analysis to develop a better understanding of entry modes, and explore the specific costs of each mode of business, and how they relate to industry and environmental characteristics.

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Appendix: Definitions of Independent Variables (except dummies)

CE_EUROPE Percentage share of turnover in CEE in total turnover of the firm. From (i) annual reports of the firm, (ii) question 12, (iii) follow-up questionnaires, (iv) from the questionnaire.

GLOBAL Percentage share of employment outside the home country in total employment, from (i) annual reports, (ii) Dun Bradstreet and Hoppensteadt directories, (iii) question 12.

HUMAN_CAP Ratio of personnel expenditures in £ sterling over employment, from (i) Amadeus database (ii) from annual reports or (iii) follow up questionnaire.

R&D Percentage ratio of research and development expenditures over turnover, from (i) annual reports, (ii) "The 1993 UK R&D Scoreboard" [Company Reporting Limited], (iii) question 13 of the questionnaitre, (iv) follow-up questionnaires, (v) predicted values of a regression equation using only varibles not employed elsewhere inthis research.

SIZE Number of employees of the firm, from (i) Fame and Amadeus database (ii) annual reports (iii) Dun Bradstreet and Hoppensteadt directories, (iv) follow-up questionnaires. For regression analysis divided by 10^5.

TRANSITION Unweighted average of ten indices presented by EBRD [1997] for the progess in economic transition. They cover aspects of enterprise reform, development of markets, financial institutions and the legal framework.

Appendix: Test for 'Independence of Irrelevant Alternatives'

The M-Logit model assumes that the alternative choices are independent, a property known as "independence of irrelevant alternatives" (IIA). Under IIA, for the coefficients $\mathbf{ß}_m$ estimated M-Logit, should not be more efficiently estimated in the presence of a third alternative. If IIA was *in*appropriate, then without the third alternative the vector of coefficients $\mathbf{ß}_b$ obtained with the binomial Logit should be *in*consistent. Thus, the test has to compare the consistent M-Logit estimator with the efficient estimates of a binomial Logit. If IAA holds, then the binomial Logit should also be consistent. Greene [1993, p. 671] recommends a test of the IIA assumption based on a test statistic by Hausman and McFadden [1984] of the following form:

$$(7A.1) \qquad (\mathbf{ß}_b - \mathbf{ß}_m)' [\mathbf{V}_b - \mathbf{V}_m]^{-1} (\mathbf{ß}_b - \mathbf{ß}_m) = \chi^2$$

where $\mathbf{ß}_b$ is estimated without the alternative presumed to be independent, and $_m\mathbf{ß}$ for the coefficients obtained with the unrestricted model, i.e. the M-Logit. $\mathbf{V}_b$ and $\mathbf{V}_m$ are the respective estimates for the asymptotic variance-covariance matrices. If the null hypothesis of IIA cannot be rejected, using the M-Logit would be permissible.

Greene discusses this test for a conditional Logit.[19] Applying this test to a multinomial model has an additional complication because the M-Logit returns coefficients estimates for each odds ratio. Thus, (c-1)n values are estimated where c is the number of choices and n the number of variables. Dropping the alternative assumed to be irrelevant reduces the number of coefficient estimates to (c-2)n. In the present case of three choices, the reduced model is a binomial Logit. This does not permit to calculate the above test-statistic because the matrices have unequal dimensions: In the present case, with eighteen variables plus an intercept (n=18): $\mathbf{ß}_b$ is [18x1], $\mathbf{ß}_m$ is [54x1], $\mathbf{V}_b$ is [18x18] and $\mathbf{V}_m$ is [54x54].

Thus, the coefficients obtained with the M-Logit should be compared with those obtained with three binomial Logit regressions. The values needed for the covariance matrices and the vector of coefficients in equation (1) are obtained as follows:

$$(7A.2) \qquad \mathbf{V}_b = \begin{pmatrix} \mathbf{V}_{wj} & \mathbf{0} & \mathbf{0} \\ \mathbf{0} & \mathbf{V}_{wc} & \mathbf{0} \\ \mathbf{0} & \mathbf{0} & \mathbf{V}_{wt} \end{pmatrix}, \text{ and } \mathbf{ß}_b = \begin{pmatrix} \mathbf{ß}_{wj} \\ \mathbf{ß}_{wc} \\ \mathbf{ß}_{wt} \end{pmatrix}$$

where the indices *wj*, *wc* and *wt* refer to the Logit model of WOS versus JV, Contract and Trade respectively. Using three Logit models to estimate the relationships implies no interaction between the upper and lower parts of the vectors, such that the off-diagonal matrices of the joint covariance matrix $\mathbf{V}_b$ are zero. Under the IIA assumption, these would also be zero in $\mathbf{V}_m$. The χ^2-test tests whether or not this is true. The degrees of freedom are given by the rank of the matrix of variance-covariance differences, usually identical with the number of parameters. For the M-Logit of table 3, the resulting χ^2-test statistic for IIA-test is 24,199 with 54 degrees of freedom, which not significant at any interesting level of error.

[19] In a conditional Logit, the variables refer to properties of the choices and not, as in the M-Logit, to properties of the individuals making the choice. For each variable, one coefficient is estimated, whereas for the M-Logit one coefficient for each variable per odds ratio is estimated.

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