# CENTRE FOR THE STUDY OF ECONOMIC & SOCIAL CHANGE IN EUROPE (CSESCE)

## Corporate Governance, Managers' Independence, Exporting and Performance of Firms in Transition Economies

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## Economics Working Paper No. 62

### *January 2006*

# CORPORATE GOVERNANCE, MANAGERS' INDEPENDENCE, EXPORTING AND PERFORMANCE OF FIRMS IN TRANSITION ECONOMIES

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*This version: January 2006*

# CORPORATE GOVERNANCE, MANAGERS' INDEPENDENCE, EXPORTING AND PERFORMANCE OF FIRMS IN TRANSITION ECONOMIES

**[Abstract]**

Using data on 157 large companies in Poland and Hungary this paper employs Bayesian structural equation modeling to examine interrelationships between corporate governance, managers' independence from owners in terms of strategic decision-making, exporting and performance. It is found that managers' independence is positively associated with firms' financial performance and exporting. In turn, the extent of managers' independence is contingent on the firm's corporate governance parameters: it is negatively associated with ownership concentration, but positively associated with the percentage of foreign directors on the firm's board. We interpret these results as an indication that (i) risk averse, concentrated owners tend to constrain managerial autonomy at the cost of the firm's internationalization and performance, (ii) board participation of foreign stakeholders, on the other hand, enhances the firm's export orientation and performance by encouraging executives' decision-making autonomy.

*Key words*: corporate governance, strategic independence, exporting, performance

# CORPORATE GOVERNANCE, MANAGERS' INDEPENDENCE, EXPORTING AND PERFORMANCE OF FIRMS IN TRANSITION ECONOMIES

## 1. Introduction

Economic reforms and globalization of firms in transition economies have dramatically changed the boundaries and content of governance and strategy of firms, exposing them to multipoint competitive pressures. Managers of these firms have to make strategic decisions in a complex decision-making environment (Sanders and Carpenter, 1998), and one should expect that the performance of large firms may be closely linked with managerial flexibility in making strategic decisions within the context of the firm's governance. Yet this issue remains relatively unexplored. Emphasis on organizational and environmental factors as antecedents of both financial performance and export performance ignores possible organizational effects of managers' strategic independence, defined as their ability to provide timely and effective strategic responses in a rapidly changing environment (Harrigan, 1985, Mahoney, 1995), especially without being constrained by new owners of formerly state-controlled firms (Newman, 2000). In addition, little is known about the impact of emerging corporate governance mechanisms on managerial strategic independence, although previous research suggests that this may be an important antecedent of managerial ability to undertake performance-enhancing strategies (Hoskisson et al., 2000).

This study explores the links between corporate governance, managers' strategic independence, exporting and financial performance of large firms in two economically important transition countries: Poland and Hungary. Before their economic reforms,

exporting remained a monopoly controlled by a handful of specialized state-owned companies. In a liberalized economic environment, with sluggish internal demand, adopting export-oriented strategies may be closely link to better financial performance (Luo and Peng, 1999). In this environment, how do private enterprises develop exporting? We address this broad question by examining three specific issues. First, how does the new freedom for management to exercise strategic choice affect export orientation (approximated by both level and change in exports as a proportion of total sales)? Second, what are the possible links between these factors and financial performance? And finally, how is managerial independence (in terms of strategic decisions) affected by the corporate governance characteristics of firms in transition countries?

Our study develops existing research and makes a number of contributions. We provide a new framework modelling the linkages between managers' strategic independence, governance factors, exporting and financial performance. Research in this area has been thin and a major barrier has been the complexity of interdependence between governance, strategies and performance. While previous research has linked strategies with performance (Hoskisson et al., 2000; Makhija, 2004), and governance directly with performance (Djankov and Murrell, 2002; Peng, 2004), this paper takes the full governance-strategy-performance paradigm and makes a novel contribution by applying Bayesian-based structural equation modeling (SEM) to the inter-relationships between governance factors, managers' independence, exporting strategy and financial performance. To verify our theoretical assumptions, we use a multi-industry sample of 157 large, private, non-financial firms in two new EU member-states.

## 2. Theoretical framework and research hypotheses

Economic reforms in Central and East Europe (CEE) aimed at increasing enterprise efficiency and making their products internationally competitive. Reforms were accompanied by a structural crisis, exacerbated by the collapse of the East European trading bloc and the break-up of the USSR (Uhlenbruck et al., 2003). Prolonged import protection and export promotion through monopolistic, state-owned foreign trade companies meant enterprises were ill-equipped to meet overseas threats and had different opportunities for internationalization.

Privatization was designed to eliminate the constraints on the managerial independent decision-making process imposed by state ownership (Hoskisson et al., 2000; Makhija, 2004). In the case of Hungary and Poland, companies were privatized using a wide range of methods, with a significant participation of strategic investors, including multinationals (Djankov and Murrell, 2002). These privatizations resulted in a diverse range of ownership structures and corporate governance mechanisms (Newman, 2000). It has been acknowledged in previous research that corporate governance affects enterprises restructuring and financial performance (Hoskisson et al., 2000; Peng, 2004), however the effects of governance on exporting are less clear. Therefore, transition economies are a natural context in which to test theories concerning the first stage of internationalization, i.e. direct exporting (Andersen, 1993; Aulakh et al., 2000).

Our study is based on the governance-conduct-performance paradigm in strategic management, with export intensity and financial performance being the outcome of a multi-dimensional strategic decision-making process. This process is driven by the firm's managers' strategic independence, which is defined as "an ability to respond to various

demands from dynamic competitive environments" (Sanchez, 1995, p. 138). When managers are not constrained by new owners in terms of their strategic decisions, they are able to take timely actions aimed at improving the firm's competitive position in domestic markets and promoting overseas outputs (Aulakh *et al.*, 2000). By being involved in international activities, firms in transition economies may further develop their capabilities (Sanders and Carpenter, 1998), and this suggests a positive relationship between exporting and financial performance (Luo and Peng, 1999).

Although performance and export orientation in particular may be increased by higher degrees of managerial decision-making autonomy; the latter, in turn, depends on the firm's governance factors such as ownership structure and board composition (Uhlenbruck *et al.*, 2003; Hoskisson *et al.*, 2000). Therefore, our framework suggests that the complex relationships between governance, exporting and financial performance are mediated by managers' strategic independence. The following sections discuss these issues in detail.

*2.1. Managers' strategic independence, export orientation and performance*

Institutional and economic reforms associated with the EU accession process and internationalization of transition economies, such as Poland and Hungary, imposed new demands on local firms to develop the dynamic capabilities that enable them to take advantage of new opportunities, including gaining access to new product markets (Hoskisson et al., 2000; Newman, 2000). Uhlenbruck et al. (2003) strongly emphasize that the continuously changing market conditions in transition economies require the development of "strategic flexibility" that should help firms to take advantage of

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existing and new strategic opportunities. Strategic flexibility depends jointly on the inherent flexibility of resources available to the organization (Finney et al., 2005) and on managers' "flexibility in coordinating the use of resources" (Sanchez, 1995, p. 138).

The importance of "resource flexibility" has been acknowledged in previous research (Harrigan, 1980; Mahoney, 1995). For example, the resource-based view considers the organization's capacity to change as a function of such firm characteristics as capital "specificity", "slack" resources, the firm's diversity defined in terms of product diversification and/or organizational structure (Finney et al., 2005; Hitt et al., 1998). However, firms in transition economies inherited from their central planning past a bundle of resources, which are inconsistent with the requirements of effectiveness in a market economy (Uhlenbruck et al., 2003). Therefore, in the transition environment, another component of the firm's flexibility, managerial strategic independence, or their ability to make bold and timely decisions over capability-enhancing strategies without restrictions imposed by new owners of privatized firms, may become particularly important. In command economies, managerial initiatives were constrained by direct orders from the planning bureaucracy (Kornai, 1980). New private owners of firms in Poland and Hungary were expected to unlock managerial talent, but with repeated institutional upheavals, organizational learning was difficult, and the extent of a firm's embeddedness in the old strategies could become a barrier to change (Newman, 2000). Peng (2004) suggests that uncertainty and institutional changes in transition lead to a deepening mistrust between managers and "new principals", who may try assume full control over strategic decisions. To summarize, organizational outcomes of strategic restructuring in transition economies, such as the extent of internationalization and

financial performance, may be impeded not only by constraints related to organizational resources, but also by a lack of managerial strategic independence, or their ability to use wider strategic options without restrictions imposed by new owners. Hence:

*Hypothesis 1. The extent of managers' strategic independence is positively associated with export orientation.*

*Hypothesis 2. The extent of managers' strategic independence is positively associated with financial performance.*

International business research considers exporting and financial performance as inter-related organizational outcomes of the firm's strategic dynamics (Aulakh et al., 2000). Using sunk-cost arguments, a number of authors suggest that financially better-performing firms in an industry are more likely to be exporters (Bernard and Jensen, 1999; Clerides et al., 1998). There has been less research on whether there is a positive link back from exporting to firm performance. International business research argues that internationalization enables firms to leverage their existing capabilities and knowledge across countries and create scale economies otherwise unavailable domestically (Andersen, 1993). Sanders and Carpenter (1988) suggest that being exposed to overseas markets helps the firm respond more effectively to foreign competitors in their domestic market. Firms are continually searching for new technologies, new ways of organizing their operation, and can take advantage of new information gained by exporting to compete in their home market (Bernard and Jensen, 1999). Gains from export orientation may be particularly strong in transition economies. With initial near-autarchy and slow recovery, export orientation may be a key factor leading to improved financial performance (Luo and Peng, 1999). Hence:

*Hypothesis 3*. *Export orientation is positively associated with financial performance.*

*2.2. Corporate governance and managers' strategic independence*

Institutional upheavals and rapid change in transition economies increase the ambiguity surrounding managers' actions (Newman, 2000). This creates incentives for outside shareholders to become directly involved in strategy shaping, as they are not able to observe and evaluate managers' strategic decisions and their outcomes adequately (Sanders and Carpenter, 1998). As a result, when there is an increase in information asymmetry between managers and owners, as implied by the economic transition in general, and internationalisation of the firm in particular, outside owners may limit managers' "strategic freedom". In this environment, large and undiversified shareholders have both the incentive and the means to restrain the strategic independence of managers and reduce their responsibility to purely technical tasks. Moreover, lack of developed capital markets in CEE, limited portfolio diversification and liquidity mean that large shareholders are affected adversely by the company's idiosyncratic risks (Maug, 1998). Even when large investors recognise the potential upside gains associated with risky strategies, such as internationalization, lack of diversification opportunities and threats of managerial strategic errors may prompt them to impose severe restraints on managerial decision-making independence. Hence, we propose:

*Hypothesis 4*. *The extent of managers' strategic independence is negatively associated ownership concentration.*

The composition of a firm's board of directors is another governance parameter that can affect decision-making process, shaping the extent of managers' strategic independence (Baysinger and Hoskisson, 1990). Strategy research particularly emphasizes the importance of the board's service and strategic roles when the firm faces a highly uncertain environment of economic transition (Peng, 2004). For firms, which were until recently operating in the semi-autarchic environment, a particularly positive role in this respect may be played by the foreign directors, who supply critical information and advice otherwise unobtainable. Board members associated with foreign investors also improve monitoring capacity of the board that reduces information asymmetries between managers and new owners and mitigates moral hazard costs associated with managerial decision-making autonomy. Therefore, presence of foreign board members may bring in new organizational culture, enhancing managers' strategic independence, and we suggest:

> **Hypothesis 5**. *The extent of managers' strategic independence is positively associated with the proportion of foreign directors on the firms' board.*

## 3. Research Methods

*3.1. Sample*

Firm-level data was collected simultaneously in Poland and Hungary in 2001 using the same structured instrument (translated and back-translated from English into Polish and Hungarian, correspondingly). In the course of face-to-face interviews, company presidents and CEOs provided information on measurable company characteristics, and managers' assessment of their independence reported on a 7-point

Likert scale. Our surveys of Polish and Hungarian companies were conducted by the Research Department of the Polish Sociological Society jointly with CASE Institute (Warsaw), and by the Institute of Economics of the Hungarian Academy of Science respectively. To obtain representative samples of large companies, we defined the sample frame using two large company lists that are in public domain in Poland and Hungary. In Poland, we used a list of the 500 largest (in terms of sales) non-financial companies that is maintained by the Institute of Economics of the Polish Academy of Sciences and regularly published by the *Rzeczpospolita*. In Hungary, we used a list of the 250 largest companies available from the *Figyelo* magazine. These two lists were combined together, producing a sample frame for the survey. The average non-response rate in both countries was below 10%. The survey generated 100 and 57 usable questionnaires in Poland and Hungary respectively. We verified the representativeness of our sample using available comparison criteria, such as size, age, industry affiliation, etc. A standard test of non-response bias indicated no significant differences between respondents and non-respondents on variables such as country and industry distributions, number of employees, etc. Concerned with inter-rater reliability, a randomly selected 5% of companies were re-visited by the interviewers. No deviations between the study data and companies' documents, such as payroll lists, share registers, etc. were identified.

## 3.2. Measures and analysis

We adopt the structural equation modeling (SEM) approach and estimate SEM parameters using Gibbs sampling, a simulation procedure based on the Markov chain Monte Carlo (MCMC) method, implemented in the Bayesian inference package

WinBUGS (Spiegelhalter *et al*., 2000). Bayesian SEM is a more robust research methodology because it circumvents the need to rely on asymptotic theory in the estimation procedures, which may be questionable when the sample size is small, and, therefore, inferences based on maximum likelihood estimates of SEM may be over-confident. Another advantage of the Bayesian method is the possibility to impute missing values associated with non-responses to the survey questions. (For details see: Gelman *et al*., 2004; Congdon, 2003; Gilks *et al.,* 1996).

In the SEM we investigated the relationships between latent (unobservable) constructs for managerial independence ($\psi_i$), export orientation ($\eta_i$) and operating performance ($\xi_i$) of a firm *i*. A graphical summary of the SEM is provided in Figure 1, where measurable indicators are in boxes and latent variables are in ovals.

<center>FIGURE 1 NEAR HERE</center>

To develop the managerial independence variable ($\psi_i$) we used eleven ordinal indicators of managerial independence $y_k$ generated by answers to scaled response questions with regard to how much independence the management team has in deciding on: 1) product mix; 2) selection of customers; 3) selection of suppliers; 4) investment; 5) research and development; 6) finances; 7) employment; 8) wages; 9) management and organization systems; 10) pricing policy and marketing; 11) choice of trade partners. The answers were provided on a 7-point Likert scale with 1 = decided by the owners (i.e. a local parent, foreign company, other institutional investors, etc.) and 7 = decided by the firm's executive team. The latent variable for export orientation ($\eta_i$) was operationalized by using the proportion of export revenues to total sales for 2000 (*expr$_i$*) and the percentage change in export sales over the period 1998-2000 (*expgr$_i$*). The latent variable of

operating performance ($\xi_i$) was operationalized by earnings before taxes over assets (*ebtass$_i$*) and earnings before taxes over sales revenue (*ebtrev$_i$*) in 2000. Similar measures have been widely used (Djankov and Murrell, 2002).

In terms of corporate governance characteristics, the ownership concentration measurement was based on information on the percentage of shares held by the largest shareholder. To take account of a possible non-linearity in ownership concentration effects, we considered four ownership intervals of less than 25%, 25-49%, 50-74% and 75-100%. Thus, the ownership concentration was represented by a four-fold categorical variable (*lsp$_i$*) defining ownership intervals. The extent of foreign representation on the board was measured by the proportion of foreign directors on board (*for$_i$*). To control for the possible effect of the identity of the largest shareholder, we also introduced a dummy variable for the largest shareholder being a foreign firm (*fins$_i$*).

Finally, we also considered a number of firm-, industry- and country-level factors that may affect performance (see Figure 1). To control for the firm's size in terms of employment, we used three dummies (*x$_{i,empl,}$*) for intervals of (250-499), (500-999) and (above 1000) of employees respectively. The (below 250) interval was used as a control. Four sector dummies (*x$_{i,sector}$*) were used for labor-intensive (ISIC codes 15-20 and 36), resource-intensive (ISIC codes 21-26), high-tech (ISIC codes 28-35), services and construction (ISIC codes 45, 50-52, 55) industries, with firms from heavy industry (ISIC: <14 and 27) being used as a control. A dummy variable (*x$_{i,poland}$*) was used for companies in Poland.

The Bayesian model includes two parts: (i) a set of measurement equations that provide links between the manifest variables discussed above and the three latent

constructs, and (ii) structural equations which verify the relationships between the latent constructs ($\psi_i$, $\eta_i$, $\xi_i$), as well as analyze the effects of governance parameters on managerial independence ($\psi_i$). We estimated the following SEM, with the following structural equations:

$$\xi_i = \alpha + \beta_{ind}\psi_i + \beta_{exp}\eta_i + \beta_{empl}x_{i,empl_i} + \beta_{sector}x_{i,sector} + \beta_{poland}x_{i,poland} \qquad (1a)$$

$$\eta_i = k_1 + v_{ind}\psi_i \qquad (1b)$$

$$\psi_i = k_2 + \delta_{lsp}lsp_i + \delta_{fins}fins_i + \delta_{for}for_i \qquad (1c)$$

and measurement equations given by:

$$ebtrev_i = k_3 + \lambda_{ebtrev}\xi_i \qquad (2a)$$

$$ebtass_i = k_4 + \lambda_{ebtass}\xi_i \qquad (2b)$$

$$expr_i = k_5 + \lambda_{expr}\eta_i \qquad (2c)$$

$$expgr_i = k_6 + \lambda_{exgr}\eta_i \qquad (2d)$$

$$\text{logit}\{\Pr(y_{ik} \leq j_k)\} = \theta_{kj} - \gamma_k \psi_i \quad , k = 1 \div 11 \qquad (2e)$$

where $\beta_{ind}$, $v_{ind}$, $\beta_{exp}$ are parameters associated with interrelations between performance, managerial independence and export orientation; $\lambda_{ebtrev}$, $\lambda_{ebtass}$, $\lambda_{expr}$, $\lambda_{expgr}$, $\gamma_k$ are the factor loadings that show how observed indicators determine scores of latent constructs; $\delta_{lsp}$, $\delta_{fins}$, $\delta_{for}$ are parameters related to the effects of ownership and board composition on managerial independence; $\beta_{empl}$, $\beta_{sector}$, $\beta_{poland}$ are the coefficients for the effects of control variables; $\alpha$, $k_i$ are the intercepts. Equations (2e) include unknown threshold parameters, and they specify proportional-odds models for the eleven ordinal indicators of managerial independence $y_k$ with observed categories $j_k$ and factor loadings $\gamma_k$ (see Agresti, 1986, and Congdon, 2003).

To ensure identifiability, we defined the three latent variables ($\psi_i$, $\eta_i$, $\xi_i$) as normally distributed with variances of unity. We also allowed for the monotonicity

constraint for thresholds $\theta_{kj}$, and their ordering, by setting truncated standard normal prior distributions with zero means and large variances. Since in the Gibbs sampling context the predetermined variance identifiability constraint can lead to a problem of "re-labelling" of the latent construct scores during the sampling, we followed Congdon (2003) and restricted normal priors with zero means and large variances for factor loadings and parameters $\beta_{ind}$, $\beta_{exp}$ $v_{ind}$, to positive values.

We verified the convergence of the MCMC simulation using the Gelman-Rubin scale reduction factor (SRF) for a two-chain run (Gelman, 1996). We also verified the model's goodness-of-fit by calculating the posterior $p$-value (tail-area) probabilities from the posterior predictive replications (see Gelman, 1996, and Gelman et al., 2004, for a detailed discussion of the construction and computation of the Bayesian $\chi^2$ test). The posterior predictive $p$-value based on the likelihood-ratio test statistic and 2,000 predictive replications was equal to 0.227, confirming a good fit between our model and the data (Scheines et al. 1999).

## 4. Results

Table 1 provides the definitions of variables used in this study and the descriptive analysis of our data. 68 percent of companies were from the manufacturing sectors, with 32 percent being from services and construction. The mean employment level in our sample was 1063, but the distributions were skewed due to the presence of a few very large companies, especially in the Hungarian sub-sample, where the largest company had 15,599 employees. The distributions of two alternative measures of size, e.g., assets and total revenues, followed a similar pattern. Based on the full sample, the mean value of

total revenues was US$65.5 million while the mean book value of total assets was US$42.8 million. In terms of corporate governance parameters, almost half of the firms in Hungary and Poland had foreign owners as the largest shareholders. With regard to the proportion of shares held by the largest owner, our data indicates a relatively high level of share-ownership concentration, e.g., 62.5 percent of the total equity. Foreign directors on average held almost a third of board seats.

TABLE 1 NEAR HERE

Table 2 provides the results of SEM estimations of inter-relationships between governance, strategic independence and performance. According to the results of the measurement models for the three latent variables, strategic independence proxies were within the credible intervals, and they generated a robust latent variable ($\psi_i$). Similarly, the export performance and financial performance proxies were also within credible intervals, and they generated the corresponding latent variables ($\eta_i$, and $\xi_i$).

TABLE 2 NEAR HERE

SEM results generally supported our hypotheses with regard to the inter-relationships between managers' strategic independence, export- and financial-performance. In particular, the strategic independence construct was positively associated with export orientation (the coefficient $\nu_{ind}$) and financial performance (the coefficient $\beta_{ind}$). These results support hypotheses 1 and 2. In addition, export orientation was positively associated with the latent variable for financial performance (the coefficient $\beta_{exp}$), and this confirms hypothesis 3. Finally, in terms of the controls, Polish firms significantly under performed their Hungarian counterparts, as indicated by the

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coefficient ($\beta_{poland}$). The firm's size and sector affiliation did not have any effects on performance.

In terms of corporate governance effects on strategic independence, the SEM results for ownership concentration suggested that there was a negative effect of block-holders on strategic flexibility, but it was significant only at very high levels of concentration: the coefficients ($\delta_{lsp}$) were negative and within the confidence interval for (50-74%) and (75-100%) ownership ranges, i.e., the levels of ownership that are above the controlling stake, in line with hypothesis 4. The coefficient for the proportion of foreigners on board ($\delta_{for}$) was within the confidence intervals, and it was positively associated with the strategic independence construct, in line with hypothesis 5. In addition, the SEM results provided evidence of a negative but insignificant relationship between the strategic independence construct and the dummy variable for the foreign largest shareholder ($\delta_{fins}$).

## 5. Discussion and conclusions

Our study is one of the first examining simultaneous links between corporate governance, managerial independence, exporting and financial performance. This paper helps to fill gaps in relation to multi-industry samples of larger newly-privatized manufacturing firms in the transition context. It shows that managerial independence in terms of strategic decision-making may play crucial role as a driver of internationalization and performance. The extent of managerial independence is determined by the general governance factors, such as ownership and board structures. High ownership concentration in transitional economies was investors' response to low

levels of protection of minority shareholders (La Porta et al., 1997). However, the strategy-level outcomes of this concentration are restrictions on managerial independence that may have negative effects on the local firm's internationalization and performance. Although we focus specifically on Poland and Hungary, variations in governance regimes (La Porta et al., 1997) suggest scope for international analyses of the links between governance, strategic independence and performance.

The contrasting effects of ownership concentration/board representation on export- and performance-enhancing strategic independence of managers may have important implications for both the strategy and the exporting literature. Our research suggests that foreign investors' board involvement is playing a relatively more important strategic role than the size of their equity stakes in local firms. This finding is consistent with resource and strategy views on corporate governance that suggest that, in addition to control functions, external board members may also play service/resource roles in the decision-making process (Baysinger and Hoskisson, 1990), especially when the firm faces a highly uncertain environment of institutional transition (Peng, 2004). Our evidence suggests that in transition economies foreign board members may have a positive impact on the extent of managerial independence, which, in turn, underpins exporting and performance.

In addition, we have found evidence of a significant, positive link between exporting and financial performance in the two transition economies. Exporting, however, is the first stage in the firm's internationalization path (Bernard and Jensen, 1999). As the integration of Poland and Hungary into the EU proceeds, performance differences between exporting and non-exporting firms may affect their subsequent
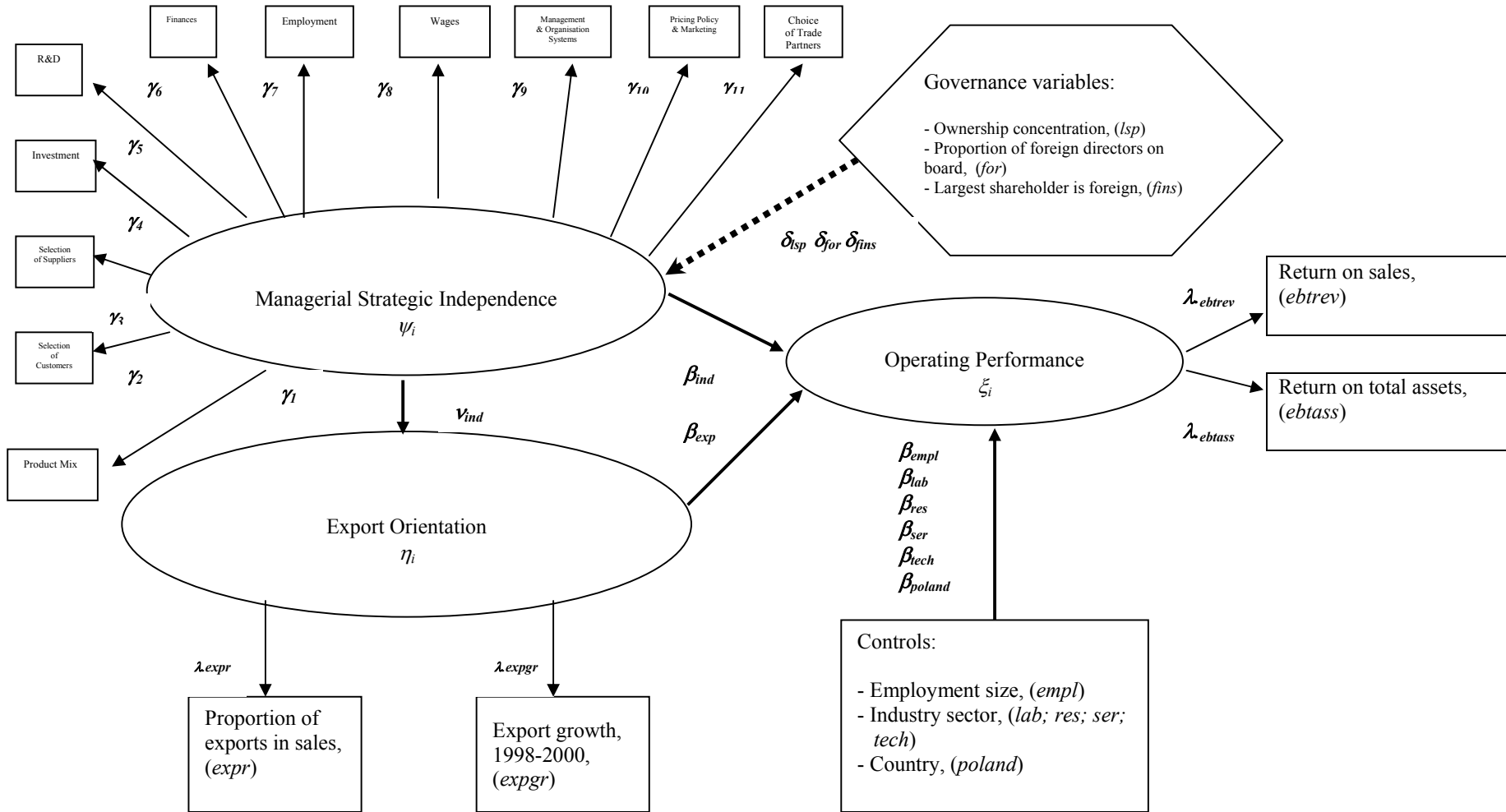
internationalization decision. The longer-term analysis of their strategic dynamics may shed new light on the complex inter-relationships between corporate governance, business strategy and performance.

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# Figure 1. Structural Equation Model

R&D

Finances

Employment

Wages

Management & Organisation Systems

Pricing Policy & Marketing

Choice of Trade Partners

$\gamma_6$ $\gamma_7$ $\gamma_8$ $\gamma_9$ $\gamma_{10}$ $\gamma_{11}$

Investment

$\gamma_5$

$\gamma_4$

Selection of Suppliers

$\gamma_3$

Selection of Customers

$\gamma_2$

$\gamma_1$

Product Mix

**Managerial Strategic Independence** $\psi_i$

**Governance variables:**

- Ownership concentration, (*lsp*)
- Proportion of foreign directors on board, (*for*)
- Largest shareholder is foreign, (*fins*)

$\delta_{lsp}$ $\delta_{for}$ $\delta_{fins}$

$\beta_{ind}$

$\beta_{exp}$

$\nu_{ind}$

**Operating Performance** $\xi_i$

$\lambda_{ebtrev}$

Return on sales, (*ebtrev*)

$\lambda_{ebtass}$

Return on total assets, (*ebtass*)

$\beta_{empl}$
$\beta_{lab}$
$\beta_{res}$
$\beta_{ser}$
$\beta_{tech}$
$\beta_{poland}$

**Export Orientation** $\eta_i$

$\lambda_{expr}$

$\lambda_{expgr}$

Proportion of exports in sales, (*expr*)

Export growth, 1998-2000, (*expgr*)

**Controls:**

- Employment size, (*empl*)
- Industry sector, (*lab; res; ser; tech*)
- Country, (*poland*)

**Table 1. Variables and Descriptive Statistics**

| Variable | Definition | Mean | Std. Dev. |
|---|---|---|---|
| **Performance** | | | |
| $ebtrev$ | Earnings before taxes over sales, % | 2.16 | 8.83 |
| $ebtass$ | Earnings before taxes over assets, % | 0.022 | 0.17 |
| **Export orientation** | | | |
| $expr$ | Export revenue as % of total sales | 0.25 | 0.28 |
| $expgr$ | Change in export sales over 1998-2000, % | 1.93 | 10.41 |
| **Managers' independence factors** | | | |
| $y_1$ | product mix | 5.54 | 1.89 |
| $y_2$ | selection of customers | 5.52 | 1.67 |
| $y_3$ | selection of suppliers | 4.77 | 2.16 |
| $y_4$ | investment | 4.54 | 2.10 |
| $y_5$ | research and development | 4.77 | 2.11 |
| $y_6$ | finances | 5.42 | 1.72 |
| $y_7$ | employment issues | 5.65 | 1.72 |
| $y_8$ | wages | 5.58 | 1.70 |
| $y_9$ | management and organization | 5.42 | 1.97 |
| $y_{10}$ | price policy and marketing | 5.52 | 1.86 |
| $y_{11}$ | choice of trade partners | 4.94 | 2.18 |
| **Corporate governance** | | | |
| $lsp$ | Proportion of shares held by the largest shareholder, % | 62.46 | 32.60 |
| $for$ | Proportion of foreign investors' representatives on board, % | 31.12 | 36.41 |
| **Control variables** | | | |
| $x_{poland}$ | Dummy variable for Polish firms | 0.64 | |
| $x_{lab}$ | Labor intensive industry (ISIC: 15-20 and 36) | 0.36 | 0.48 |
| $x_{res}$ | Resource intensive industry (ISIC: 21-26) | 0.21 | 0.41 |
| $x_{tech}$ | Medium and high technology industry (ISIC: 28-35) | 0.06 | 0.22 |
| $x_{ser}$ | Services and construction (ISIC: 45, 50-52, >55) | 0.34 | 0.47 |
| $x_{empl}$ | Number of employees | 1063 | 1771 |
| $fins$ | Largest shareholder is a foreign investor, a dummy variable | 0.46 | 0.50 |

**Table 2. Structural Equation Modeling Results**

| | Mean | Credible interval | |
|---|---|---|---|
| | | 2.50% | 97.50% |
| ***Measurement models; indicator-factor loadings*** | | | |
| Performance | | | |
| $\lambda_{ebtass}$ | 0.023 | 0.018 | 0.033 |
| $\lambda_{ebtrev}$ | 0.020 | 0.015 | 0.029 |
| Export orientation | | | |
| $\lambda_{expgr}$ | 0.098 | 0.004 | 0.258 |
| $\lambda_{expr}$ | 0.074 | 0.002 | 0.223 |
| Managerial independence | | | |
| $\gamma_1$ | 1.991 | 1.469 | 2.588 |
| $\gamma_2$ | 2.484 | 1.901 | 3.178 |
| $\gamma_3$ | 1.795 | 1.352 | 2.309 |
| $\gamma_4$ | 1.716 | 1.300 | 2.190 |
| $\gamma_5$ | 2.006 | 1.528 | 2.560 |
| $\gamma_6$ | 1.491 | 1.107 | 1.932 |
| $\gamma_7$ | 1.677 | 1.245 | 2.183 |
| $\gamma_8$ | 1.633 | 1.200 | 2.125 |
| $\gamma_9$ | 2.283 | 1.713 | 2.937 |
| $\gamma_{10}$ | 3.009 | 2.283 | 3.896 |
| $\gamma_{11}$ | 1.326 | 0.959 | 1.732 |
| ***Hypothesized relationships and controls*** | | | |
| Performance, independence and exporting | | | |
| **$\beta_{exp}$** | **43.220** | **28.370** | **53.510** |
| **$\beta_{ind}$** | **2.191** | **0.067** | **6.738** |
| **$v_{ind}$** | **0.069** | **0.003** | **0.189** |
| Ownership concentration[1] | | | |
| $\delta_{lsp}$[2] 25-49% | -0.406 | -1.130 | 0.316 |
| **$\delta_{lsp}$[3] 50-74%** | **-0.990** | **-1.687** | **-0.277** |
| **$\delta_{lsp}$[4] 75-100%** | **-0.900** | **-1.613** | **-0.181** |
| Proportion of foreign directors on board  **$\delta_{for}$** | **0.058** | **0.033** | **0.090** |
| Employment size[2] | | | |
| $\beta_{empl}$[2: 250-499 employees] | -4.265 | -29.240 | 16.870 |
| $\beta_{empl}$[3: 500-999 employees] | 4.133 | -19.680 | 23.630 |
| $\beta_{empl}$[4: 1000 and more] | -10.110 | -36.480 | 12.850 |
| Poland dummy  **$\beta_{poland}$** | **-36.570** | **-56.020** | **-18.780** |
| Largest shareholder's identity $\delta_{fins}$ | -0.559 | -1.045 | -0.060 |

NOTES: Highlighted coefficients (in bold) suggest the 5% level of significance. Sectoral dummies (all insignificant) and the intercepts are not included in the table.
1. Coefficients for ownership concentration are contrasts with a group where the largest shareholder owns 24% of shares and less.
2. Coefficients are contrasts with a group of firms with 250 employees and less.

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