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Article

Ownership concentration and investment performance of Austrian listed companies

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Abstract:
We apply panel estimation techniques to full population of Austrian corporations from 2007-2020 in order to analyze the impact of ownership concentration on performance. Return on investment (ROI) is lower than cost of capital, which insinuates that managers invest beyond optimal investment level instead of maximizing shareholders' wealth. ROI for pyramidal firms is 35% lower than cost of capital implying that managers pursue their objectives. State-owned firms' ROI is 28% lower than cost of capital showing that discretionary investments lead to sub-optimal performance. An inverted U-curve is estimated with a turning point at 69% voting rights, beyond which entrenchment effect dominates the incentives effect for 37% firms. This evidence confirms minority shareholders' expropriation, which has repercussions for efficient governance in Austrian corporations.

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Analysis of the effects of ownership concentration on corporate investment performance has been an important strand of the literature since the pioneering work of Morck et al. (1988). In a sample of large US companies, they found that Tobin's *q* displays a non-monotonic reaction to managerial shareholdings: a positive association holds for managerial shareholdings up to 5%, while between 5% and 25% a negative relation dominates; thereafter, a positive relationship takes over once more. Their analysis interpreted the positive part of the relation as being consistent with incentives becoming more and more aligned between outside shareholders and managers, i.e. managerial shareholdings overcome the problem of the separation of ownership and control. However, if managers begin to hold a substantial stake in the company, it is nearly impossible to replace them. Thus, there is a range of their shareholdings where they destroy more value than they add – at which point, they become entrenched.

Analyzing the impact of ownership concentration on investment performance is important for countries with strong corporate governance regimes. It is all the more important for Austria, a developed economy in Western Europe, which has a Germanic insider corporate governance system, with two-board systems in place in Austrian Corporations (see Gugler et al., 2003 for a

detailed discussion on insider and outsider corporate governance systems). If entrenchment effects and private benefits of control are reasonably low, small minority shareholders will invest in the shares of listed companies. Only if capital market institutions properly protect them against managers will external capital markets grow.

This study analyzes the impact of ownership concentration on the investment performance of all non-financial companies listed on the Vienna Stock Exchange. This is the first study that comprehensively analyzes corporate investment performance employing the entire population of all non-financial Viennese listed firms. In the microeconomic framework, managers have their own goals such as increasing the growth and size of the firm. They wish to pursue these goals even when it harms their shareholders (Marris, 1998). The firm's manager or the largest shareholder has discretion in allocating their internal cashflows. While investing they choose this source of finance over external sources i.e. bank loans or equity offerings (Jensen, 1986). For the full population of all non-financial companies listed on the Vienna Stock Exchange, we ask how corporate investment affects the corporation's market value. In this study we exploit the time series variation in ultimate ownership to control the endogeneity problem of structural reverse causality by estimating firm fixed effects and random effects regressions (see Demsetz and Lehn, 1985). We measure performance using a marginal q that has been derived from the micro theory of the firm. Marginal q is a marginal return on a firm's investment. It is defined as the ratio of return on investment to the cost of capital. It is more adequate for dealing with reverse causality than alternative approaches that use average performance measures such as return on assets or market to book value that confound infra-marginal and marginal returns and are not ideal for analyzing agency problems (see Demsetz and Lehn, 1985). The concept of marginal q allows us to estimate a causal relationship between ownership concentration and performance, which runs from the former to the latter.

Our research paper analyzes the ownership structures of the entire population of non-financial companies listed on the Vienna Stock Exchange. It is the first study for Austria that examines the relationship between ownership concentration and investment performance measured by a marginal q, by employing data from 2007-2020 for all non-financial companies listed on the Vienna Stock Exchange. The empirical analysis establishes a non-linear relationship between marginal q and concentration of voting rights, which is an inverted U-curve with a turning point at 69% concentration, in contrast to the diagram with two turning points drawn by Morck et al. (1988). The steep downward sloping part of the curve presents reasonably strong evidence of entrenchment.

This article is organized as follows. Section 1 gives an overview of the literature on the interaction of ownership concentration and performance. Section 2 presents our hypothesis. Section 3 focuses on determining ultimate ownership. Section 4 presents the methodology used for measuring performance and the equation for estimating the effects of ownership concentration on performance. In section 5, we describe the sources of information and report the descriptive statistics for variables used in the regression analysis. Section 6 comprises panel-data analyses of the impact of ownership concentration on performance. Conclusions are drawn in the final section.

1. Literature review

Tobin (1969) illustrated the (schematic) capital account approach for a closed economy. A row may be labeled as demand deposits or producers' durable equipment in his general accounting

framework. In contrast, columns represent sectors of the economy that are constrained by their own wealth. Commercial banks, central banks, non-bank financial institutions, and the general public are examples of sectors. In this approach, financial policies and events mainly affect aggregate demand by changing the valuations of physical assets relative to their replacement costs. Monetary policies can accomplish such changes, but other exogenous events can too.

Hayashi (1982) analyzes US corporations and finds that investment is a function of marginal *q* (the ratio of market value of an additional unit of capital to its replacement cost). He tests the conjecture put forward by Tobin and derives the optimal rate of investment as a function of marginal *q* adjusted for tax purposes. The ratio of corporate investment to the total capital stock at replacement cost is regressed on marginal *q* over 1953 to 1976, which gives a positive coefficient on marginal *q*. The analysis shows that marginal *q* and average *q* (the ratio of market value of capital to its replacement cost) are the same under the conditions that the firm is a price taker and the production and installation functions are homogenous.

Hoshi et al. (1991) present evidence from Japanese companies, which is consistent with the view that information and incentive problems in the capital market have important effects on corporate investment. They hypothesize that group firms are not subject to asymmetric information problems when financing their investments because other group members have access to information. The sample is divided into 176 independent and 121 group companies based on the refinement made by Nakatani (1984) of the *Keiretsu no Kenkyu's* classification that focuses on a company's financial ties with its group's financial institutions. Tobin's *q (*ratio of the market value of total assets of the company and book value) is used as a proxy for investment prospects. The dependent variable is depreciable assets divided by the capital stock. Cash flow, the measure of liquidity, only has a positive significant coefficient in the investment equation for independent companies. Contrary to the over-investment hypothesis that predicts a negative coefficient for both interaction terms, the difference between liquidity coefficients of group companies and non-group companies is larger for high Tobin's *q* firms.

Walker (2001) explores the effect of group membership on the investment policies of Japanese companies. In order to analyze the determinants of investments, he uses a large sample of Japanese companies from 1993-1998. The investment of horizontal group members is less sensitive to growth opportunities and more sensitive to operating cash flow than the investment of independent firms. The measure of investment efficiency used is the product of the relative investment level and growth opportunities. The *Keiretsu* provides strong evidence that industrial groups in Japan transfer capital between members. The investment patterns of Japanese group companies appear to be similar to the evidence of investment patterns in US conglomerates.

According to Ganchev (2013), the monetary circuit theory was the Keynesian thought regarding the circulating flow of goods and services in the economy. Generally, the characteristics of the previous studies in the theory of monetary circulation comprise money as a function of circulation, initiation, and devastation of money as an endogenous process by the real economy, and the capability of the banks to create money. The probable feature of this theory is the transition from micro to macro level (Arena and Salvadori, 2003). This implies that the neoclassical paradigm shift is associated with individual supply and demand, and monetary circuit theory, explain that the construction of socioeconomic groups may have different relationships with the banking industry.

According to the investment literature, there is a hierarchy of finance in firms' financing patterns. Firstly, firms use cash flows to finance investments. Secondly, they take on debt, and finally they approach the equity market. Myers (1983) reports that US companies rely heavily on

internal funds and debt to finance their investments. Myers (2002) reviews capital structure theories; pecking order theory, agency theory, capital structure irrelevance, and trade-off theory.

Fazzari and Hubbard (1988) tested the asymmetric information hypothesis by basing their test solely on the financial constraint part of the hypothesis. They divided the sample of 422 US companies into low, medium, and high retention ratio sub-samples, and used them to estimate cashflow-investment equations, which also included Tobin's q to analyze differences in investment opportunities.

Mueller and Yurtoglu (2000) estimate marginal q's on investments from cash flow, debt and equity offerings for a large sample of companies from 38 countries. They categorize countries by origins of legal systems and report that marginal q on reinvested cash flows is lower than 1 for some countries from all types of legal origins. In these cases, investments from internal cash flows yield the worst performance. For other countries, again from various kinds of legal origin, marginal q's on debt and equity are equal to or greater than 1. In these cases, this holds for investments out of debt. On the whole, countries with English-origin legal systems tend to perform better than others. Thus, external capital markets are effective in forcing managers to earn marginal q's on debt and equity equal to or greater than 1.

Franks and Mayer (2001) report very high levels of concentration of ownership in German corporations, particularly associated with holdings by other companies and families. The complex ownership patterns involve pyramidal structures. They ask whether distinctive ownership characteristics are associated with effective corporate governance or exploitation of private benefits of control. Although there is no hostile takeover market in Germany, there is a substantial market in share stakes that superficially bears close resemblance to an Anglo-American market for corporate control. However, it differs in two crucial respects. Firstly, it allows price discrimination between sellers of share blocks and other investors and, secondly, the overall gains to merger as reflected in bid premia are low in relation to those in the UK and US. The modest gains to changes in ownership are mirrored in board turnover that is low as compared to takeovers in the UK and US, suggesting that control benefits for ownership changes in Germany are comparatively small.

Marris (1998) reports that managers pursue excessive growth of firms even when it harms the interests of the shareholders (see also Kathuria and Mueller, 1995).

Gugler (1998) analyzes the ownership structures of the 600 largest Austrian non-financial corporations. Comparing concentration of ownership across European countries reveals that ownership concentration in Austria is particularly high. Pyramiding leads to separation of ownership and control, state-controlled pyramids and bank-controlled pyramids may suffer from insufficient monitoring. Control in the domestic investor categories, banks, the state, and families/individuals reduces firm profitability significantly. Although foreign control increases firm profitability, state control is particularly detrimental to shareholder wealth maximization. From this perspective ownership concentration seems excessive in Austria. According to the author, a more developed capital market, especially a more developed stock exchange would surely help in the efficient financing and governing of Austrian corporations.

Gugler et al. (2004) analyze the effect of corporate governance institutions and ownership structures on investment performance by using a sample of more than 19000 companies from 61 countries. They use marginal q to measure performance and show that legal system origin is the most important determinant of performance. Companies in countries with a legal system of English origin earn at least as much as their costs of capital. However, companies in countries with civil law systems earn returns on investment below their costs of capital. Differences in

performance that are related to a country's legal systems dominate differences related to ownership structures.

Mueller (2006) emphasizes the need for strong corporate governance institutions to facilitate the creation of thick equity markets in developing countries. Managers of companies in developing countries in Southeast Asia have more discretion to make bad investments from debt and equity offerings because corporate governance institutions are weaker in developing than in developed countries. Sometimes, growth maximizing managers of companies in developing countries in Asia use excessive equity to finance questionable investments. Thus, investors in Southeast Asia are willing to invest in the shares of listed companies without sufficient regulatory protection.

Farooque et al. (2007) analyze a sample of 73 Bangladeshi listed companies. They report an S-shaped non-linear relationship between board ownership and performance, with entrenchment dominating for small and for large ownership ratios, essentially a mirror image of the function reported by Morck et al. (1988). However, the non-linear reaction disappears when they apply a two-stage least squares estimation procedure that takes care of potential ownership endogeneity.

Kumar (2008) analyzes ownership structures and performance of Indian companies from 1994 to 2000. He estimates a U-curved relationship between directors' shareholding and performance.

Khwaja and Mian (2005) report evidence of manipulation of stock prices by collusive stockbrokers. A significant part of the stock market turnover reflects manipulative practices. They recommend the implementation of good governance and other laws to strengthen the equity markets.

Afgan et al. (2017) analyze the ownership structures of 125 Pakistani listed companies from 1997 to 2007. Pakistan's corporate governance is weak and unable to protect minority shareholders from expropriation by dominant largest shareholders. Strong evidence shows that return on investment compared to the cost of capital is below 1 for Pakistan. Return on reinvested cash flow is less than the cost of capital for Pakistan, which provides evidence of the hypothesis that the largest shareholders or managers exercise discretion while reinvesting cash flows, which leads to sub-optimal performance. The analysis reveals that financial institutions in Pakistan are confounded with asymmetric information while lending to firms. Due to the weak governance regime, financial institutions often cannot sell collateralized assets pledged by delinquent borrowers.

Jin and Park (2015) analyze how the separation of cash flow and voting rights affects the performance of firms affiliated with large family business groups. Analyzing data from Korean Chaebols from 2003 to 2010, they find that the separation of cash flow and voting rights positively affects accounting performance but not market performance.

Blanca et al. (2010) analyze insider ownership and firm performance of Spanish listed firms. They employ a large sample of Spanish listed companies for investigating the effect of insider ownership on performance and provide evidence of the convergence of interests and entrenchment effect. The empirical analyses suggest that insiders of Spanish family firms become entrenched at higher ownership levels.

Hamadi (2010) explores the relationship between ownership of controlling shareholders and firm performance of Belgian listed companies from 1991 to 1996. Firm performance is measured by Tobin's *q.* In her study, Tobin's *q* is regressed on largest shareholder's concentration, firm size & age, leverage, and research and development. She finds that large shareholders in family-owned firms have a positive effect on performance. The analysis shows that the largest shareholders have a negative effect of performance and the presence of a second shareholder has no impact on performance.

Tran and Le (2020) analyze the relationship between ownership concentration and performance for Vietnamese listed companies. They find a positive relation between ownership concentration and the riskiness of profitability. This finding is consistent with the argument that large shareholders owning controlling equity stakes promote the firm's risk-taking activities by weakening the strategic roles of risk-averse managers. In Vietnam's weak institutional framework, this empirical evidence advocates that private benefits appeal to dominant shareholders and encourage them to engage in risk-taking activities at the expense of minority investors.

Pasko et al. (2020) analyze ownership concentration and performance of agro-industrial companies in Ukraine. They have found no significant relationship between ownership concentration and performance, which is measured by EBITDA, profit before tax, and Tobin's q.

To synthesize the findings of the reviewed literature on ownership concentration and investment performance, Morck et al. (1988) estimated an up-down-up relationship between ownership concentration and Tobin's q for 371 Fortune 500 companies in the USA. Analyzing US corporations, Hayashi (1982) argues that marginal q and average q (the ratio of market value of capital to its replacement cost) are the same under the conditions that the firm is a price taker and its production and installation functions are homogeneous.

For the United Kingdom, Short and Keasey (1999) report a non-linear relationship between ownership concentration and corporate investment performance.

Cable (1985) is of the view that banks are most important in corporate governance in Germany. Franks and Mayer (2001) report very high levels of concentration of ownership in German corporations, particularly associated with holdings by other companies and families, and complex patterns of ownership.

For Japan, Hoshi et al. (1991) analyze information and incentive problems in the capital market. Employing cash flow and short-term securities as measures of liquidity, they find that cash flow has a positive coefficient only in the investment equation for independent companies. An important finding is that the difference between liquidity coefficients of the group and non-group companies is larger for firms with high Tobin's q. Walker (2001), analyzing a large sample of Japanese listed companies, finds that investment of horizontal group members is less sensitive to growth opportunities and more sensitive to operating cash flow than is the investment level of independent firms. According to his research, the Japanese Keiretsu provides strong evidence that industrial groups in Japan transfer capital between members.

Jin and Park (2015) analyze Korean Chaebols and find that separation of cash flow and voting rights positively affects accounting performance.

For Belgium, Hamadi (2010) found that large shareholders in family-owned firms have a positive effect on performance. Pasko et al. (2020) found no significant relationship between ownership concentration and performance of Ukrainian agro-industrial firms, which is measured by EBITDA, profit before tax, and Tobins q.

There are very few studies on Austria such as Pfaffermayr (1999) and Nieto (2021) that employ samples of listed companies to analyze corporate governance in Austrian corporations. There is no exclusive study for Austria that uses a marginal q to estimate the effects of ownership concentration on investment performance employing the whole population of non-financial companies listed at the Vienna stock exchange.

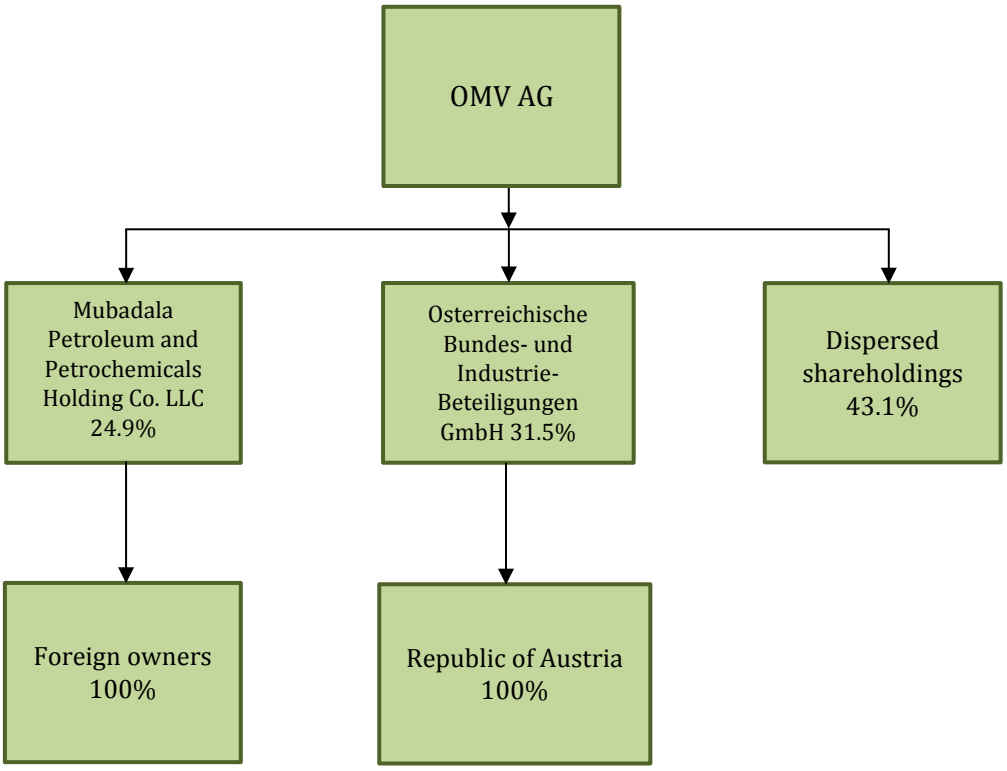
2. Hypothesis

The managerial discretion hypothesis (MDH) postulates that managers of firms pursue their own objectives instead of maximizing the wealth of shareholders. Managers' own objectives are to increase the size or growth of their companies, even when growth is harmful to their shareholders (Marris, 1998). The pursuit of excessive growth is detrimental to shareholders.
According to the MDH, managers could conceal the nature of investments in the firm for maximizing their own value (Yurtoglu, 2006). Therefore, they have tendencies to invest beyond the optimal level of investment. This leads us to the following hypothesis: investment performance is hypothesized to be a function of largest ultimate shareholders' voting rights concentration.

3. Ownership structures

The ownership of Austrian listed companies is highly concentrated: concentration of ownership is evident from table 1, which reports the direct and ultimate ownership in Austria. The ownership structure of OMV AG is illustrated in figure 1.

Figure 1 – *Ownership Structure of OMV AG, Vienna*



The largest direct shareholder of OMV AG is Oesterreichische Bundes- und Industriebeteiligungen GmbH that has shareholdings of 31.5%. Oesterreichische Bundes- und Industriebeteiligungen GmbH is fully owned by the state. The largest ultimate shareholder of OMV AG is the state. Mubadala Petroleum and Petrochemicals Holding Co. LLC, United Arab Emirates, a foreign entity has shareholdings of 24.9%.

Table 1 reports the ownership concentration by the identity of the largest direct and ultimate shareholders. The variable ownership expresses the mean (median) of ownership whenever these entities are largest direct shareholders.

Table 1 – *Direct ownership and ultimate ownership panels*

	Direct ownership panel	Ultimate ownership panel				
	Largest direct shareholders	Largest ultimate shareholders[a]				
	Ownership	Voting[b] Rights (VR)			Companies[c]	
Ownership identity	Mean	Mean	Median	SD	Number (N)	% age
Listed companies	57.88					
Holding companies	51.46					
Families	25	44.24	38.47	24.21	14	52
State	31.50	48.38	40	22.28	3	11
Financial institutions	10.25	20.25	20.25	–	2	7
Foreign	54.56	68.24	72.35	25.92	8	30
Total	52.45	52.03	51.87	24.85		

Notes: This table presents the ownership and control structures of Austrian listed companies.
[a] Ultimate shareholders of 3 firms in the sample are dispersed shareholders.
[b] We do not report cash flow rights in tabular form because of a minimal deviation of cash flow rights from voting rights.
[c] N represents the number of ultimately-controlled firms by each of the largest ultimate shareholders like state, families, foreign, and financial institutions.

Table 1 illustrates that ultimate ownership is a more meaningful concept than direct ownership. By tracing the ownership links across the multiple layers of a Pyramidal Ownership Structure, we can ascertain the identity of the largest ultimate shareholder along with the respective voting rights in the firm. As compared to direct ownership, it is more meaningful to know that the largest ultimate shareholder is a family or state or foreign-owned entity (see Almeida and Wolfenzen, 2006).

The median of largest ultimate shareholders' voting rights concentration is 51.87 %. Austria has a bank-based financing system. Concentration of ownership is an important feature in bank-based systems of finance. Pyramidal structures are very common in bank-based systems as they allow largest ultimate shareholders to exercise control at a low cost (see Gugler, 1998). In Austria, ultimate shareholdings are highly concentrated.

4. Model

Investment performance is estimated using a marginal q, i.e. the ratio of a company's return on investment to its cost of capital (Mueller and Reardon, 1993). Suppose I_t is a company's investment in period t, then the present value of this investment, PV_t, in period t is as follows:

$$PV_t = \sum_{j=1}^{\infty} CF_{t+j} / (1 + i_t)^j \quad (1)$$

Here PV_t is the present value of the investment I_t in the period t, CF_{t+j} is the cash flow generated from I_t in period $(t + j)$, and i_t is the cost of capital in period t.

PV_t from equation (1) and the investment (I_t) can be used to determine the ratio of a pseudo-permanent return (r_t) to i_t, a ratio that will be referred to as q_{mt}:

$$PV_t = I_t r_t / i_t = q_{mt} I_t \quad (2)$$

Here r_t is the pseudo-permanent return on I_t and i_t is the cost of capital. If the company had invested the same amount I_t in a project that produced a permanent return r_t, this project would have yielded the exact same present value as the one actually undertaken. This ratio $q_{mt} = r_t / i_t$ is the key statistic in our analysis. If a company maximizes shareholder wealth, then it does not undertake an investment for which $q_{mt} < 1$.

The market value of the company at the end of period t (M_t) can be defined as follows:

$$M_t = M_{t-1} + PV_t - \delta_t M_{t-1} + \mu_t \quad (3)$$

In this equation, M_t is the market price multiplied by the outstanding common shares of the company, PV_t is the present value of I_t, $\delta_t$is the depreciation rate for the company's total capital as evaluated by the capital market, and μ_t is the market's error in evaluating M_t.

Subtracting M_{t-1} from both sides of (3) and replacing PV_t with $q_{mt} I_t$ yields the following equation:

$$M_t - M_{t-1} = q_{mt} I_t - \delta_t M_{t-1} + \mu_t \quad (4)$$

Here $M_t - M_{t-1}$ is the change in the company's market value during the year t, and q_{mt} is the ratio of return (r_t) to i_t. Equations (2) and (4) define the ratio of a company's return on investment to its cost of capital. It is evident that q_{mt} is a marginal q: consider Tobin's q, i.e. the ratio of a company's market value and its total stock of capital, which is an average return on capital. Marginal q is the change in the market value of the company divided by change in its capital stock (investment) that caused it.

It is convenient to illustrate these issues using two numerical examples:

In the first example, assuming a given investment by a company of 100 produces a future stream of cash flows with a present value (PV_t) of 132.62. If $\delta_t = \mu_t = 0$ and the company invests at an $r_t > i_t$, then equation (4) implies that its market value increases by more than 100 ($I_t = 100$ and $PV_t = 132.62$, q_{mt} =1.3262).

In another example, we assume $\mu_t = 0$ and $r_t = i_t$. If $\delta_t = 0.05$ and $M_{t-1} = 1000$, then the company must invest 50 just to keep its market value unchanged.

Two additional features of marginal q are worth noting. First, its use as a measure of performance obviates the need to calculate company costs of capital. Equations (2) and (4) define the ratio of a company's return on investment to its cost of capital, which is precisely the statistic needed for estimating the impact of ownership concentration on performance. Second, the procedure for calculating q_{mt} allows for different degrees of risk across companies. The stock market will demand a greater future stream of cash flows from an investment of 100 before it raises the market value of a high- company by 100, than it demands from a low-risk company because cash flows from a high-risk company will be discounted by a higher discount rate.

It is hypothesized that a change in market value can be attributed to investment during t (I_t), depreciation of assets (δ_t) and other factors that are reflected in the error (μ_t). The assumption of capital market efficiency implies that μ_t in equation (4) has an expected value of zero. Thus, this equation can be used to estimate both depreciation (δ_t) and marginal $q(q_{mt})$ under the assumption that they are either constant across companies, or over time, or both. Dividing both sides of (4) by M_{t-1} yields the following equation:

$$(M_t - M_{t-1}) \,/\, M_{t-1} = -\delta + q_m I_t \,/\, M_{t-1} + \mu_t \,/\, M_{t-1} \tag{5}$$

The left-hand side of the equation is the relative change in the market value of the company during the year t Equation (5) is favored over other possible rearrangements of (4) because, in cross section regressions, it is less likely to be subject to heteroscedasticity owing to the deflation of all error terms by M_{t-1}.[1] The depreciation rate ($-\delta$) represents the expected fall in a company's market value during any given year in which there was no investment. It is not only a measure of the decline in the value of a company's tangible assets, but also the decline in the value of its intangible assets such as research and development due to imitation by competitors and expiration of patents.

The estimation of equation (5) requires data on the market value of each company and on its investments. Market value of a company at the end of t, M_t is defined as the sum of the market value of its outstanding shares at the end of t and the value of its outstanding debt.[2] Since this value reflects the market's evaluation of its total assets, an equally comprehensive measure of investment is used. Accordingly, investment is defined as follows:

$$I = CF - DIV + \Delta D + \Delta E + RND \tag{6}$$

In this equation, CF denotes the cash flow (profits before taxes + depreciation + amortization – taxes), DIV denotes cash paid as dividends, ΔD denotes net additions to investment funds from changes in outstanding debt, and ΔE denotes net additions to funds from public offerings of equity. Research and development (RND) is also a form of investment that can produce intangible capital

[1] Although both the market value of the company, M, and its investment, I, carry a t subscript, equation (5) does not suffer from a simultaneous equation bias. M_t is a company's market value at the end of year t, while I_t is the investment flow during year t. Thus, I_t is measured before M_t and can be treated as exogenous. A possible bias in estimating the returns on investment relative to the cost of capital using (5) arises, if the market anticipates the investments to be made in the future and the returns on them. Equation (5) accurately estimates marginal $q(q_m)$ even if the market correctly anticipates these investments at $t-1$, if the expected returns on future investments equal a company's cost of capital ($r = i$). The methodology will yield lower (higher) estimates of q_m and δ if at $t-1$ the market correctly anticipates investment at t with returns $r > i$ ($r < i$). Thus, when empirical analysis of agency problems is performed with $r < i$, we are likely to under estimate agency problems. For a comprehensive discussion and evidence on no systematic bias in the estimates, see Mueller and Yurtoglu (2000).

[2] Market value is used for preference shares listed on the stock exchange. Book value is used for unlisted preference shares and outstanding debt.

that contributes to the market value. Since expenditure on research and development is expensed, it must be added back to yield a comprehensive measure of a company's additions to its total capital.

To analyze the impact of ownership concentration on performance, $(M_t - M_{t-1}) / M_{t-1}$ is regressed on I_t / M_{t-1} and its interaction terms with voting rights of largest ultimate shareholders, square of voting rights, company size and leverage. A positive coefficient on voting rights (VR) of largest ultimate shareholders indicates incentives for enhancing performance. Negative coefficient on squared voting rights (VR^2) indicates that the largest ultimate shareholders or managers are entrenched. They tend to divert corporate resources from minority shareholders to themselves. Size (S) is hypothesized to positively affect performance if larger companies are more transparent and better disclose their results. Larger companies may be more diversified than smaller companies, which might lead to lower risk but also to larger diversification discounts. Leverage (L) is a control variable. The model is written in equation form as follows (refer to the appendix for definitions of variables and derivation of equation):

$$(M_t - M_{t-1}) / M_{t-1} = \alpha_0 + \beta_1 I_t / M_{t-1} + \gamma_1 VR \cdot I_t / M_{t-1} + \gamma_2 VR^2 \cdot I_t / M_{t-1} + \gamma_3 S \cdot I_t / M_{t-1} + \gamma_4 L \cdot I_t / M_{t-1} \quad (7)$$

5. Data

A sample of all non-financial companies listed on the Vienna stock exchange (VSE) was chosen. The financial and stock prices data from 2007 to 2020 were prepared from the databases, ORBIS and Datastream. The analysis uses unbalanced panels because all companies were not listed from 2007 to 2020.

Summary statistics of variables are reported in Table 2 (***, **, * denote significance levels of 1%, 5%, 10% respectively). The Sidak method is used for assessing the significance levels of the correlation coefficients (see Hamilton, 1993, pp. 171-175).

Table 2 – *Summary statistics of variables (means, medians) and correlation coefficients*

	$(M_t - M_{t-1}) / M_{t-1}$	I_t / M_{t-1}	Company Size (S)	Leverage (L)
Mean	0.03	0.08	6.90	0.60
(Median)	(0.01)	(0.07)	(6.29)	(0.61)
Matrix of correlation coefficients				
	$(M_t - M_{t-1}) / M_{t-1}$	I_t / M_{t-1}	Company Size (S)	Leverage (Lev)
$\frac{I_t}{M_{t-1}}$	0.69***			
S	0.06	0.12**		
Lev	–0.13**	–0.08	–0.18***	

6. Empirical analysis

The panel regression estimation of equation (5) for measuring investment performance of listed companies is reported in table 3 (in this and the following tables ***. **, * denote significance levels of 1%, 5%, and 10% respectively).

Table 3 – *Investment performance of companies listed on the Vienna stock exchange*

Panel A **Full sample**	$-\delta$	q_{Mi}	[a]	Adj. R^2 / Within R^2	Observations
Pooled regression	–0.03** (0.011)	0.79*** (0.456)	–	0.46	359
Firm Fixed Effects	–0.03** (0.011)	0.81*** (0.050)	–0.08	0.45	359
Random Effects	–0.03** (0.014)	0.80*** (0.046)	0.000 (assumed)	0.45	359
Chow F-test statistic for data pooling				0.8	
Degrees of freedom (d.f.)			(41,316)		
Hausman test statistic[b]			1.02		

[a] correlation of effects and covariates; [b] null distribution is chi- square (χ^2) with two degrees of freedom.

Panel B **Pyramidal business groups**	$-\delta$	q_{mI}	$ID_{Pyramid} \cdot I_t \,/\, M_{t-1}$	Adj.R^2	Observations
Full sample	–0.03** (0.013)	0.97*** (0.052)	–0.56*** (0.092)	0.59	359
Pyramidal firms Pooled regression	–0.03 (0.010)	0.53*** (0.048)	–	0.32	261
	$-\delta$	q_{mI}	Effect-covariate correlation	Within R^2	Observations
Firm Fixed Effects	–0.03* (0.011)	0.65*** (0.055)	–0.38***		261
Random Effects	–0.03 (0.110)	0.54*** (0.048)	0.000		261
Chow F-statistic for data pooling		F–statistic		1.50	
		Degrees of freedom (d.f.)		(22,237)	
Hausman test statistic[b]		17.28***			

Notes: this table exhibits investment Performance of companies Listed on Vienna Stock Exchange.
[b] null distribution is chi- square (χ^2) with two degrees of freedom.

The results are robust. Depreciation can vary from industry to industry depending on the kind of capital they invest in. Industry dummy variables are added to equation (5) for estimating variation in depreciation across different industries. Except for the financial services industry, all the industry binary variables are insignificant.

Panel A in table 3 reports the regression coefficients of the pooled regression, the rate of depreciation (δ) and the estimated marginal q. Depreciation is 3%. The null hypothesis of the Wald test that marginal $q(q_m)$ equals 1 can be rejected at the 1% significance level. This implies that the return on investment is 21% lower than the cost of capital. There is strong evidence of agency costs in the ownership structures of Austrian listed companies.

$(M_t - M_{t-1}) / M_{t-1}$ is a market variable that is susceptible to stock price volatility arising from investor optimism (pessimism) and other factors. The fluctuation in the stock prices leads to outliers. To reduce the effect of outliers, $(M_t - M_{t-1}) / M_{t-1}$ is capped at the percentiles 1 and 99 (the regression results are not reported in tabular form to save space). The estimated marginal q is 0.62, which is significantly lower than 1. This confirms the strong evidence on agency costs in the ownership structures of Austrian listed companies.

Depreciation is 3% in the firm fixed effects estimation. The return on investment is 19% lower than the cost of capital. The null hypothesis of the Chow test for data pooling cannot be rejected, which implies that pooled ordinary least squares are preferred over firm fixed effects. The marginal q estimate obtained from the random effects regression is 0.80. Thus, the panel data estimations substantiate the evidence on agency costs in the ownership structures of Austrian corporations.

A dummy variable pyramid is defined in Panel B that takes on the value 1 for companies that are constituents of a pyramidal group and zero otherwise. The interaction term $ID_{Pyramid}\ I_t / M_{t-1}$ is significant at the 1% level, and the estimated coefficient on the interaction term is negative. This implies that the ultimate shareholders of companies that are constituents of a pyramidal business group could divert resources to their private enterprises (see Almeida and Wolfenzon, 2006). Pooled regression for the sample of firms, which are constituents of pyramidal business groups, obtains a return on investment significantly lower than the cost of capital. The null hypothesis of the Wald restriction test can be rejected at the 1% significance level implying that the marginal q is unambiguously lower than 1. This confirms evidence on suboptimal investment performance of firms that are part of the pyramidal business groups. The firm fixed effects and random effects regression are estimated. However, the estimated depreciation and marginal q are unchanged. The null hypothesis of the Hausman test is rejected. A Hausman test prefers firm fixed effects (FE) to the random effects (RE) specification.

Industry dummy variables are interacted with I_t / M_{t-1} in equation (5) to analyze differences of marginal q across industries. However, all the interaction terms are insignificant.

Table 4 reports the investment performance of foreign-owned and state-owned companies. In order to analyze the performance of foreign-owned entities, a dummy variable $ID_{Foreign}$ is defined that takes on the value 1 for companies directly or indirectly owned by foreign entities and zero otherwise. $ID_{Foreign}$ is interacted with I_t / M_{t-1} in equation (5). The estimated coefficient on the interaction term, $ID_{Foreign}\ I_t / M_{t-1}$ is positive and significant at the 1% level. There is strong evidence that marginal $q(q_m)$ on investments of foreign-owned companies is higher than companies ultimately-owned by other investing entities. This implies that foreign-owned companies receive transfers of technology, expertise and specialized knowledge from investing companies. Equation (5) is estimated for the sample of foreign ultimately-owned firms. The estimated q_m is 1.02, which is significant at the 1% level. The pooled regression is preferred over the firm fixed effects because the null hypothesis of the Chow test cannot be rejected. The random effects model is estimated, and the estimates are unchanged. The results presented in panel C provide conclusive evidence that foreign-owned firms receive transfers of technology, expertise, and specialized knowledge from investing companies.

Table 4 – *Investment performance of foreign-owned and state-owned companies*

Panel C	$-\delta$	q_{mI}	$ID_{Foreign} \cdot I_t \,/\, M_{t-1}$	Adj.R^2 / Within R^2	Observations
Foreign-owned			c		
Pooled Regression	–0.05* (0.025)	1.02*** (0.053)	–	0.84	70
Fixed Effects	–0.05* (0.025)	0.98*** (0.058)	0.25***		70
Random Effects	–0.05* (0.025)	1.02*** (0.053)	0.000		70
State-owned firms: investment performance					
Panel D	$-\delta$	q_{mI}	c	Adj.R^2 / Within R^2	Observations
Pooled regression	–0.02** (0.043)	0.72*** (0.252)	–	0.16	39
Firm Fixed Effects	–0.02** (0.044)	0.67** (0.262)	0.132***	0.16	39
Random Effects	–0.02*** (0.043)	0.72*** (0.252)	0.000 (assumed)	0.16	39
Chow F-statistic for data pooling		F-statistic		0.65	
		Degrees of freedom (d.f.)		(2,35)	

Notes: This table presents investment performance of foreign-owned and state-owned companies.
[c] correlation of effects and covariates.

State companies in Austria operate in vital industries of the economy such as oil and gas exploration and transmission, aerospace, electricity generation, and high technology industries. Panel D reports the depreciation (δ) and marginal q for the sample of state-owned companies. Depreciation is 2%. The hypothesis of the Wald restriction test that q_m equals 1 can be rejected at the 1% significance level, which implies that the return on investment is significantly lower than the cost of capital. The null hypothesis of the Chow test for data pooling cannot be rejected. This implies that pooled ordinary least squares are preferred over firm fixed effects.

The random effects regression is used and estimates are unchanged. Random effects also provide conclusive evidence on suboptimal investments by managers of state companies. This suggests that managers exercise discretion in investing, which among other factors, leads to suboptimal investment performance (see Gugler et al., 2003, pp. 142-143 for a brief discussion on the exercise of discretion by managers of state companies).

Table 5 reports the impact of ownership concentration on performance for equation (7)'s regressions.

The results are again robust. $VR \cdot I_t \,/\, M_{t-1}$ is positive and significant, which implies incentives for improving performance. $VR^2 \cdot I_t \,/\, M_{t-1}$ is negative and significant. This result implies that the entrenchment of largest shareholders or managers dominates the convergence of interests' or incentives effect. According to the theory of entrenchment, this is detrimental to the interests of small minority shareholders.

$S \cdot I_t \,/\, M_{t-1}$ is positive and significant, which is evidence of our hypothesis that larger companies have greater transparency and better disclosure of operations.

The analysis implies that the relationship between marginal q and voting rights is an inverted U-curve with a turning point at 69.3% voting rights (see figure 2). The incentive or convergence of interests' effect dominates the entrenchment up to 69.3% voting rights. However, the entrenchment effect dominates the incentives effect beyond the voting rights' concentration of 69.3%. Voting rights of the largest ultimate shareholders for 37% of the firms fall under the downward sloping part of the curve.

Table 5 – *Ownership concentration and investment performance of companies, listed on the Vienna stock exchange*

Panel E	Pooled Ordinary Least Squares		Firm Fixed Effects	Random Effects
		Coefficient[a] (SE)	Coefficient (SE)	Coefficient (SE)
$VR \cdot I_t / M_{t-1}$		4.35*** (1.459)	4.02** (1.789)	4.35*** (1.459)
$VR^2 \cdot I_t / M_{t-1}$		–3.14** (1.229)	–2.85** (1.505)	–3.14** (1.229)
$S \cdot I_t / M_{t-1}$		0.02** (0.011)	0.03*** (0.012)	0.02*** (0.011)
I_t / M_{t-1}		0.70*** (0.382)	0.63 (0.469)	0.71* (0.382)
Constant		0.04 (0.010)	0.04*** (0.010)	0.04 (0.010)
Effect-covariate correlation			–0.05***	0 (assumed)
Observations	385		385	385
Adj. R^2	0.50			
Within R^2			0.56	0.30
Chow F-test statistic for data pooling			0.75**	
Degrees of freedom (d.f.)			(43, 337)	
Hausman test[b]			0.67	

[a] Leverage is insignificant. Therefore, it is not reported for saving space.

[b] Null distribution is chi-square (χ^2) with five degrees of freedom.

7. Conclusion

This is the first research paper on Austria that analyzes ownership structures of the full population of all non-financial corporations' listed on the Vienna Stock Exchange. The median of the largest ultimate shareholders' voting rights concentration is 51.87%, revealing that ownership in Austria is highly concentrated. The Austrian listed companies exhibit a tremendously high concentration of ownership.

Return on investment[3] is 21% lower than the cost of capital, which shows strong evidence of agency costs in the ownership structures of Austrian listed companies. We find strong evidence that the return on investment for firms, which are constituents of pyramidal business groups, is 41% lower than the cost of capital. This implies that the ultimate shareholders of companies that are constituents of a pyramidal business group could divert resources to their private enterprises.

State companies in Austria operate in vital industries such as oil and gas exploration and transmission, aerospace, electricity generation, and high technology. Return on investment for the state sample is 28% lower than the cost of capital. This suggests that managers of state companies exercise discretion in investing, which among other factors, leads to suboptimal investment performance.

The analytical approach used for determining the optimal level of investment specifies that the marginal rate of return on investment (mrr_I) curve is downward sloping that intersects the cost of capital schedule (the cost of capital function is a horizontal line). The investment level that corresponds to the point of intersection is the optimal investment level.

Firm fixed effects (FE) and random effects (RE) are estimated on unbalanced panel-data from 2007 to 2020, thereby providing strong evidence of the managerial discretion hypothesis (MDH), which hypothesizes that dominant largest ultimate shareholders or managers invest beyond the optimal level of investment that would maximize firm value. The analyses provide strong evidence of our hypothesis that investment in capital equipment is highly sensitive to firms' cash flows. Therefore, this study provides conclusive evidence that over-investment leads to returns on investment lower than the cost of capital.

The concept of marginal q allows us to estimate a causal relationship between ownership concentration and performance, which runs from the former to the latter. Voting rights (VR) of ultimate shareholders positively affect performance, whereas the voting rights squared (VR^2) negatively affect performance. This result implies an inverted U-Curve relationship between marginal q and voting rights concentration with a turning point at 69.3% (see figure 2). The inverted U-curve drawn in our research conforms to the relationships estimated between ownership and firm performance in previous studies such as the one conducted by Short and Keasey (1999), who measured firm performance of corporations in the UK by return on equity and market to book ratios, and estimated positive, negative, and positive coefficients on directors' shareholdings, squared directors' shareholdings, and cubed directors' shareholdings respectively (see also Stulz, 1988; Kumar, 2008).

The intuitive explanation of the upward sloping part of the curve is that the positive convergence of interests or incentive effect dominates the entrenchment effect up to voting rights concentration of 69%. Beyond 69% voting rights concentration, there is strong evidence of the entrenchment hypothesis as the negative entrenchment effect dominates the incentive effect. Voting rights of the largest ultimate shareholders for 37% of the firms analyzed in this research fall under the downward sloping part of the curve. This finding has policy implications for protection of minority shareholders. Although the corporate governance system is strong, largest ultimate shareholders in Austria expropriate firm value to the detriment of minority shareholders. This evidence on minority shareholders' expropriation has far reaching implications as the entrenchment of ultimate shareholders implies that minority shareholders suffer from

[3] GMY (2004) estimated the $q_m s$ for various countries including Austria. There are a few differences to point out between this study and ours: they capped M_t and I_t at the 1st and 99th percentile for each country sample in a global study, while we did not use capped data in our analysis. They do not estimate the effect of ownership concentration on investment performance in their study. Our study estimates the q_m for the entire population of Austrian non-financial companies as well as the impact of ownership concentration on performance, from which we draw an inverted U-curve.

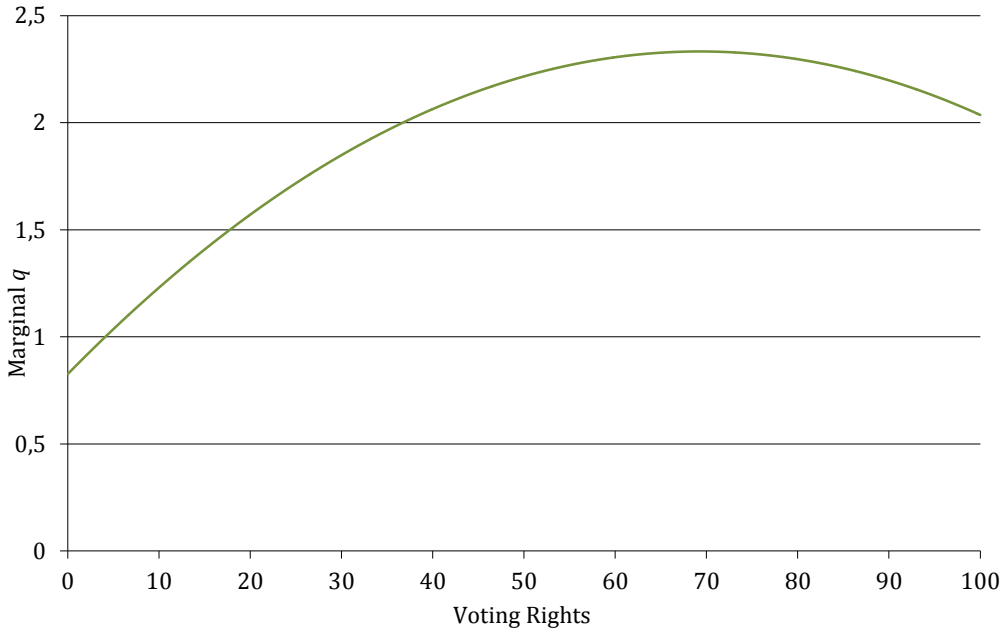
expropriation by largest ultimate shareholders. The evidence on expropriation of minority shareholders not only has repercussions for efficient corporate governance in Austrian listed companies but also slows down the growth of Austria's financial markets.

Appendix

Definitions:

One-share–one vote principle: Each common ordinary share carries one vote.
Dispersed Shareholdings: Percentage of shares owned by individual shareholders in a publicly-listed company.
Tobin's q: The ratio of the market value of total assets of the company and book value.
Company size (S): Natural logarithm of total assets.
Leverage (L): Total debt divided by total assets.
Marginal q is a function of largest ultimate shareholders' voting rights (VR), voting rights squared (VR^2), company size (S) and leverage (lev) as the following equation: $q_m = Constant + \gamma_1 VR + \gamma_2 VR^2 + \gamma_3 S + \gamma_4 lev$

Figure A1 – *The relationship between voting rights of ultimate shareholders and marginal q*



References

Afgan N., Gugler K. and Kunst R.M. (2017), "Corporate governance and returns on investments of Pakistani listed companies", *Advances in Economics and Business,* 58 (1)**,** pp. 190-199.

Almeida H. and Wolfenzon D. (2006), "A theory of pyramidal ownership and family business groups", *Journal of Finance*, 61 (6), pp. 2637-2680.

Arena R. and Salvadori N. (2003), "Introduction", in Arena R. and Salvadori N. (eds.), *Money credit and the role of the state: Essays in honor of Augusto Graziani* (pp. xv-xxii), Farnham (UK): Ashgate Publishing Limited.

Arosa B., Iturralde T. and Masaida A. (2010), "Ownership structure, insider ownership, and firm performance in Spanish non-listed Companies", available online.

Cable J. (1985), "Capital Market Information and Industrial Performance: The Role of West German Banks", *The Economic Journal*, 95(1), pp. 118-132.

Demsetz H. and Lehn K. (1985), "The structure of corporate ownership: Causes and consequences", *Journal of Political Economy*, 93 (6), pp. 1155-1177.

Franks J. and Mayer C.P. (2001), "Ownership and control of German corporations", *Review of Financial Studies*, 14 (6), pp. 943-77.

Farooque O.A., Van Zijl T.A., Dunstan K. and Karim W. A.K.M. (2007), "Corporate governance in Bangladesh: Link between ownership and financial performance", *Corporate governance: An International Review*, 15 (6), pp. 1453-1468.

Fazzari S.M. and Hubbard R.G. (1988), "Financing constraints and corporate investment", *Brookings Paper on Economic Activity*, 1988 (1), pp. 141-195. Available online.

Ganchev G. (2013), "The theory of monetary circuit", *Economic thoughts*, 1(1), pp 15-25.

Gugler K. (1998), "Corporate ownership structure in Austria", *Empirica*, 25, pp. 285-307.

Gugler K., Mueller D.C. and Yurtoglu B.B. (2003), "Corporate governance and globalization", *Oxford Review of Economic Policy*, 20 (6), pp. 129-154.

Gugler K., Mueller D.C. and Yurtoglu B.B. (2004), "Corporate governance and investment performance", *Journal of Law and Economics,* 47, pp. 589-633.

Hamadi M. (2010), "Ownership concentration, family control, and performance of firms", *LSF Research Working Paper Series*, no. 10-03, Luxembourg: University of Luxembourg, Luxembourg School of Finance.

Hamilton L.C. (1993), *Statistics with STATA*, Belmont (CA): Duxbury.

Hayashi F. (1982), "Tobin's marginal *q* and average *q*: a neo-classical interpretation", *Econometrica*, 50 (1), pp. 213-224.

Hoshi T., Kashyap A. and Scharfstein D. (1991), "Corporate structure liquidity and investment: Evidence from Japanese industrial groups", *Quarterly Journal of Economics*, 106(1), pp. 33-60.

Jensen M. (1986), "The agency costs of free cash flow", *American Economic Review*, 76, pp. 323-329.

Jin K. and Park C. (2015), "Separation of cash flow and voting rights and firm performance in large family business groups in Korea", *Corporate Governance: An International Review*, 23 (5), pp. 434-451.

Kathuria R. and Mueller D.C. (1995), "Investment and cashflow: Asymmetric information or managerial discretion", *Empirica*, 22, pp. 211-234.

Khwaja A.I. and Mian A. (2005), "Unchecked intermediaries: Price manipulation in an emerging stock market", *Journal of Financial Economics*, 78 (1), pp. 203-241.

Kumar J. (2008), "Does ownership structure influence firm value? Evidence from India", *Indira Gandhi Institute of Development Research*, no. 0406008, Mumbai: Indira Gandhi Institute of Development Research. Available online.

Marris R. (1998), *Managerial Capitalism in Retrospect*, London: Macmillan.

Morck R., Shleifer A. and Vishny R. (1988), "Management ownership and market valuation: An empirical analysis", *Journal of Financial Economics*, 20, pp. 293-315.

Mueller D.C. and Reardon E. (1993), "Rates of return on corporate investment", *Southern Economic Journal*, 60, pp. 430-453.

Mueller D.C. and Yurtoglu B.B. (2000), "Country legal environments and corporate investment performance", *German Economic Review,* 1, pp. 187-220.

Mueller D.C. (2006), "The Anglo-Saxon approach to corporate governance and its applicability to emerging markets", *Corporate Governance: An International Review*, 14 (4), pp. 207-219.

Myers C.S. (1983), "The capital structure puzzle", *The Journal of Finance*, 39, pp. 575-592.

Myers C.S. (2002), "Financing of corporations", in Constantinides G.M., Harris M., Stulz R.M. (eds.), *Handbook of the Economics of Finance* (vol 1, part A, pp. 215-253), Amsterdam, North Holland.

Nakatani I. (1984), "The economic role of financial corporate grouping", in: M. Aoki (ed.), *The Economic Analysis of the Japanese Firm* (pp. 227-258), Amsterdam: North Holland.

Nieto M. (2021), "Entrepreneurship and decentralised investment in a planned economy: a critique of the Austrian reading", *Historical Materialism*, 30(1), pp.133-163.

Pasko O., Melnychuk O. and Biluk T. (2020), "Ownership concentration, investor protection and economic performance in public agroindustrial companies listed on Warsaw stock exchange", *Independent Journal of Management and Production*, 10 (7), pp. 817-845.

Pfaffermayr M. (1999), "Ownership advantages, foreign production and productivity: evidence from Austrian manufacturing firms", *Review of Industrial Organization*, 15, pp. 379-396.

Short H. and Keasey K. (1999), "Managerial ownership and performance of firms: Evidence from the UK", *Journal of Corporate Finance*, 5, pp. 79-101.

Stulz R (1988), "Managerial discretion and optimal financing policies", *Journal of Financial Economics*, 26, pp. 3-27.

Tobin J. (1969), "A general equilibrium approach to monetary theory", *Journal of Money Credit and Banking*, 1, pp. 15-29.

Tran N.H. and Le C.D. (2020), "Ownership concentration, corporate risk-taking and performance: Evidence from Vietnamese listed firms", *Cogent Economics and Finance*, 8 (1), pp. 1-41.

Walker M.D. (2001), "Internal capital market and investment efficiency: Evidence from Japanese industrial groups", *Purdue University Working Paper*, West Lafayette (IN, USA): Purdue University.

Yurtoglu B.B. (2006), Firm-level Profitability, Liquidity, and Investment, in Altug S. and Filiztekin A. (eds.), *The Turkish Economy: The Real Economy, Corporate Governance, and Reform* (pp. 172-198), Abingdon and New York: Routledge.