MARKET LINKS AND GROWTH CAPABILITY OF ENTERPRISES IN A TRANSFORMING ECONOMY: THE CASE OF HUNGARY

by
István János Tóth

Introduction[1]

In the following study we examine various aspects of the relationships between Hungarian enterprises on the basis of a survey of approximately 300 firms (CIPE98A)[2]. The reorganisation of enterprise relationships during the transformational recession (*Kornai*, 1994) is crucial because since mid-93 growth in the Hungarian economy started to recover. The sustainability and robustness of this growth depends significantly on the extent to which the small and medium-size enterprises forming the majority of the Hungarian entrepreneurial sector can participate in it. This, however, is influenced by the extent of business relationships formed between the various segments of Hungarian enterprises. Thus we need to examine, on the one hand, the quality and frequency of business relationships between the various groups of Hungarian enterprises, and, on the other hand, the extent to which the existence and characteristics of these relationships influence the growth capacity of the companies.

Our inquiry into the nature of economic growth of companies can be divided into three questions. Is the growth *real* or *virtual* ? Is the growth *widespread* or *isolated* ? Is the growth *equalised* or *polarised* ?

In our opinion the answers to these questions are interrelated. In the first inquiry we have to examine whether the growth measured in 1997 is the result of the actual economic performance of the enterprises, or is it merely due to the fact that several dozen foreign companies relocate their production or profits to Hungary because of favourable taxation or other economic conditions? In the latter case growth is generated by simple bookkeeping procedures or by transferring some activities to Hungary which, should economic conditions change, can be transferred to another country within a short time. The second query is related to the number of companies effected by economic conditions. It is possible, that macroeconomic revorey effects all types of companies in the same way and to the same extent. But it is also possible that the improvement only concerns one group of firms, that stand out like an isle from the majority of the companies, and are considered to be the locomotive of economic growth. The third question is related to the rate of growth. How similar are the expectations of the enterprises? Will the economic expansion increase differences between various groups of firms?

[1] This study is the short version of a longer research report, published simultaneously in Hungarian. I should like to thank *Kamilla Lányi* for her remarks and criticism related to the first, Hungarian version, and *Lawrence P. King* for his enormous help by proofreading the English version of this study.

[2] A more detailed description of the CIPE98A survey can be found in Appendix 1.

It is also our opinion that the closeness, permanence and security of the relationships between business partners, their suppliers or rivals, are also very important qualities of the national economy.

Thus, our study not only supplies data in order to help answer the above questions, but will also deal with the characteristics of the relationships between the enterprises, as well as how and to what extent do they effect the growth of companies.

Enterprise networks in a transforming economy

Density of business relationships and contractual discipline

In Hungary during the years of transformational recession business relationships have become unsteady and scarce. This is indicated by surveys of large and medium-size companies (*Rába*, 1992)[3]. According to this data, in 1991-1992 the larger companies can be characterised mainly by self-sufficiency. Accounting, data processing and other activities related to production (e.g. packaging) were usually not carried out by subcontractors. Only for transport did they commission other companies in more than 90 per cent of the cases. At this time the most important reason for the regressive market relationships can be explained by to the loss of markets and the drop of production. As the market position of customers became insecure, demand also decreased. Alternatively, the customers' demands radically changed, and could not be satisfied by potential suppliers quickly enough, or at a reasonable price.

Data on the medium-size companies (100-300 employees) showed the same tendency: between 1991 and 1992 the number of large companies among their business partners decreased significantly. Only a few of them could be considered important business partners by other larger companies. Simultaneously, medium-size companies were developing closer business relationships with one another. Thus, in the business relationships of medium-size companies the signs of polarisation could be observed.

If business relationships developed between large and small or medium-size companies then these were very risky for the latter. The solvency or the delayed payments of large companies caused serious liquidity problems for medium-size companies who dealt with them. Almost 42 per cent of medium-sized companies experienced serious problems as a result of this problem, and in approximately 9 per cent of the companies it also endangered the existence of enterprises who were doing business with them. This statement is supported by the distribution of bankrupt Ltds and joint stock companies according to their size[4] If we calculate the average probability for them to go bankrupt, then we can see that the obtained ratio is higher for both the medium-size companies with 21-50 employees, and for those with 51-300 employees, than it was the case for the largest companies.

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[3] In 1992 the researchers of KOPINT-DATORG carried out two mail surveys of companies with a maximum of 1000 employees and at least 100 employees (*Rába*, 1992). Even though the data should be handled with reservations as researchers do not supply exact data as to the basic total, the samples questioned, or their representation (they don't even say how many of the companies answered the questionnaires), at some point we have to rely on these results. For 1991-1992 this is the only available data dealing with business relationships between companies.

[4] We disregarded the cooperatives and companies which had not been transformed as yet, as their bankruptcies were closely related to their transformation. We wanted to compare the survival possibilities of small and medium-size companies with economic actors under similar circumstances.

Stability of market links is a very important factor in enabling enterprises to successfully adapt to the requirements of the transforming economy. In this period there were a lot of companies operating effectively whose products could have been in demand for a long time. This would have ensured the further growth of these enterprises, but, because of the delayed payment or non-payment of their buyers, they had liquidity crises, went bankrupt, or the bankruptcy of their suppliers made their stable operation impossible.

According to the results of other empirical surveys of market links in the nineties, a significant part of the companies were forced to face up to the breach of payment and contractual discipline. This is shown by an examination of the frequency of breaking contractual obligations[5] and the reliability of business partners in the sample of medium and large companies (*Semjén – Tóth*, 1997). Among the enterprises included in the survey 17 per cent of the companies could not fulfill their contractual obligations at least once in 1996. Where this problem arose, it happened approximately 8 times, on the average. In the case of their business partners the situation is a lot worse. Only 12.5 per cent of the companies claimed that their business partners always fulfilled their payment obligations on time, while according to 32.6 per cent of those asked, delayed payment rarely and, according to 54.9 per cent, often happened. We found a positive relationship between their own and their partners' financial disciplines which indicates that payment obligations are fulfilled better than the average by those companies whose business partners are also reliable.

On the one hand, this shows a certain *segregation* between the reliable companies with a good financial position and the less solvent companies. On the other hand, however, in the case of companies with low financial reserves, this phenomenon can be explained by a "domino theory". If a company "has to join the queue", that is, becomes the victim of non-payment, then the liquidity problems and financial discipline of this dutiful company can waiver. This is also shown by the result that among companies, who did not fulfill their contractual obligations, the ratio of those with losses and liquidity problems was higher than the average. Also, among them there were more companies with unpaid taxes. Furthermore, according to the type of majority ownership there were significant differences as to contractual discipline. *This phenomenon hardly occurred in the case of companies owned by foreigners (1.8 per cent).*

To approximate the probability of breaching contractual discipline by the various characteristics of the company, we see that the probability ratio has been increased threefold by the existence of unpaid taxes, and was decreased to one-tenth by foreign majority ownership. These results confirmed the validity of observations concerning the special circumstances of companies owned by foreigners (*Tóth – Semjén*, 1996).

Examining the financial discipline of business partners we found it less favourable in the case of companies with liquidity problems. More than the average of the latter had indicated that their partners are often late in fulfilling their financial obligations (67.5 per cent). This happens more often than the average in the case of

[5] We asked about the non-fulfillment of contractual obligations which had negative consequences ("Has it happened in the last year that, because of various reasons, you could not fulfill obligations included in a contract and did you have any problems as a result of this?"). Partial fulfillment of obligations, but in a way not according to the original conditions, can be the result of mutual agreement between the partners, thus, the above wording can make the inquiry about the breaking of contractual obligations more precise.

companies owned by Hungarian enterprises (69.5 per cent). We also observed that if the companies bought from Hungarian companies which were not owned by foreigners, or sold to them, then it occurred more often than the average that their own Hungarian buyers did not fulfill their payment obligations in time (60 per cent and 57 per cent).

These results show that the contractual discipline of the partners is not independent of the company's own contractual discipline. If the breach of contractual discipline observed on the part of the business partners is estimated using the characteristics of the company (sector, size, existence of foreign owner, unpaid taxes, profitability, expected net income, existence of exports) then we can see that the partners of companies which are able to significantly *increase* their incomes are *less likely* to breach financial disciplines. This result empirically confirms the fact that the possibility to increase production depends not only on the effectiveness of the given company, but also on the financial environment constituted by its business partners.

Ownership links between companies

Ownership links can be considered as a new type of relationship among companies. Empirical analyses show that among larger companies this is a widespread phenomenon (*Tóth*, 1998*b*). Approximately 40 per cent of the largest exporting manufacturing companies have investments in other companies.

Among the large companies are those firms which are parts of company networks, generated by ownership links. However, these networks are no more widespread in Hungary than in the economies of the developed Western European countries. Although, according to the theory of *recombinant property* this phenomenon should dominate the large Hungarian enterprises (*Stark*, 1996 and *Bruszt-Stark*, 1998). However, this theory is not supported by the empirical data. It can be stated that among the largest companies hardly more than 50 per cent have some kind of ownership links to other companies; only about 30 per cent of it means majority ownership (*Tóth*, 1998*a*). *Empirically seen, among the Hungarian companies effective cross-ownership links are truly exceptional, rather than dominant. This holds not only in the Hungarian economy as a whole, but for the medium-size and large companies, as well.*

On the other hand, it can be observed that, while among Hungarian enterprises the ratio of companies with ownership links is stagnating, this phenomenon had been pushed into the background among the large companies between 1992 and 1995. This is hardly by chance. A significant part of the ownership links started to develop in the initial state of the economic transformation, at the end of the 80's, with the disintegration of state firms into companies. Around this time the units which previously belonged to one state company started to become independent, and the transforming state companies bought minimum amounts of shares from each other (*Voszka*, 1998). During the nineties, however, the new owners of the old state companies slowly started to cut back on these ownership links. Furthermore, newly established companies invested less often into other firms.

In addition, among the smaller companies, the probability of ownership links increased in the first half of the nineties instead of decreasing. This tendency can be related to the difficulties in getting loans, the lack of capital on the part of small companies which were able to grow, or tax evasion (*Tóth*, 1998*b*).

Ownership and business networks

In the case of ownership links it can be examined whether there are any business links between the owners and the companies they own. It is likely, that it is not just ownership which connects the respective companies, but their technological and the supplier-buyer linkages as well.

According to the results of the investigation which covered large and medium-size companies (*Semjén - Tóth*, 1997) about half of the companies reported, that among their owners or the companies they own there is at least one company, with which they have a supplier relationship. Among these companies the ratio of those who do not produce a profit is significantly higher than the average. Thus, we can assume that they are using "transfer pricing" in these cases. Of the largest exporting firms 60 per cent had a supplier and/or buyer relationship with the owners of some of their firms or the companies they owned. That is, the ownership links usually do go together with technological or market links.

According to this, a part of legally independent companies are actually constituents of unified business networks, much as in the west European countries. Companies owned by foreigners are more affected by this phenomenon: among them the intertwining of ownership and market links is presumed to be around 70 per cent. If we group together the companies according to their credits, the companies with the highest credit (where compared to their own assets the ratio of short and long term loans is at least 50 per cent) we get a 71 per cent ratio. This result highlights that in groups of firms, forming company networks, the evolution of each company's financial success indicators cannot be treated separately from the similar indicators of other firms within the group.

The possibility of closed business circles

Besides the examination of the ownership links and the related business networks, let's touch on another aspect of market links. Do the groups of companies form closed circles through supplier links? That is, *how similar are the firms which supply each other?*

Results of our earlier research carried out on a sample of the largest exporting firms (*Tóth*, 1997) indicate that *the closest relationship* between business partners (as suppliers and buyers) *can develop between companies of similar types*. If foreign companies are important suppliers of a large exporting company then it is more than likely that they will play a significant role among its buyers, as well. The same can be said in the case of Hungarian private and state-owned firms. *The results demonstrate the relative independence of foreign companies which are business partners of large exporting companies, as compared to Hungarian private and state-owned firms.*

The market links of companies, however, do not differ significantly from each other regarding the majority owner of the company observed. The results of examinations carried out for a sample of large manufacturing companies *do not confirm* that *foreign suppliers or buyers play a significant role in the market links of foreign companies.* However, if we examine the market links of a given company with regard to the amount of its foreign ownership, then a reverse relationship can be observed, between the role of Hungarian firms in the purchases, and the weight of foreign ownership within the large exporting companies. *According to this, the more*

foreign ownership within a company, the lower the probability that a Hungarian private company sells input to the foreign owned company. The above influence can be seen in the distribution of output as well.

According to this, the results obtained from the sample of the largest exporting companies *only partially support the hypothesis that there were closed business circles in Hungarian large-scale industry. If they do exist then for the most part they are not formed on the basis of the ownership types of the companies and the ownership of the given companies has only little significance in this*. However, if we arrange the companies on an ordinal scale, according to the proportion of foreign ownership, it can be shown that the larger the proportion of foreign ownership in the company observed, *the less chance that Hungarian enterprises are important among the contractors of the company*.

Market position and growth capability of Hungarian companies in 1998

In the following analysis we shall deal with the 1997 business conditions of companies included in the CIPE98A survey, their expectations for 1998, as well as their plans. We chose indicators from four areas: the changes in the number of employees and their earnings; development; and level and dynamic of sales (net turnover). In every case we examine these characteristics for companies grouped according to size, sector and majority ownership. Due to the fact that after weighting *the survey sample can be considered representative* of the size and sectoral composition of the companies in the sample, the conclusions supply information on the condition and the expected changes in the condition of more than 3300 manufacturing, construction and trade companies belonging to this population of firm.[6]

Some characteristics of the enterprises surveyed

42 per cent of the enterprises examined were established before 1991 and almost 80 per cent of them before 1994. Most of the enterprises still in operation were established in the first part of the economic transformation during the couple of years following the passing of the company law and the law on transformation. Thus, *the years 1988-92 were crucial in the micro-level transformation of the economy*. These data support Köllő's suggestion concerning the three possible phases for economical transformation: 1986-89, 1989-92 and the years after 1992 (*Köllő*, 1996). If we examine the development of enterprises operating in 1998, we can see that by 1992, which was the year when transformational recession was at its worst, organisational forms which still characterise Hungarian enterprises had already been established.

52 per cent of the enterprises have majority ownership by Hungarian individuals, 20 per cent by Hungarian companies, 12 per cent foreign companies, and less than 4 per cent by the state or the local government. In the case of the rest of the enterprises (12 per cent) there is no majority owners. The shares in enterprises of various sizes are characteristic of each ownership type. It is usually Hungarian individuals in enterprises with less than 50, Hungarian companies with 101-250, and foreigners in firms with the largest number of employees.

[6] Sub-contracting firms were excluded from these analyses.

Employees and earnings

According to the data of the survey the number of employees did not change in 1997 as compared to 1996 (this is indicated by the 100 per cent average value in *table 1*). The management's plans to increase the number of employees in 1998, however, can already be seen. If these plans can be fully realised than the number of employees can be increased by 3.4 per cent.

In 1997 earnings increased by almost 20 per cent (the average was 19 per cent) and *no sharp increase can be expected in 1998*, since according to the plans made by management a 15 per cent increase of the earnings is probable for the whole of the sample. The coefficients of variation show that the plans of the companies' management were more unanimous concerning earnings than in relation to the probable changes in the number of employees.

We examined the changes in the number of employees and in earnings in every group formed according to size, sector and majority ownership. The results show that the difference of change in the number of employees in 1997 was significant according to the majority ownership of the companies (see *table 2*). In 1997 the number of employees increased mostly in companies with foreign ownership and the same can be expected in 1998. In the case of firms owned by Hungarian individuals or Hungarian companies we can only talk about decreasing or keeping the same number of employees. Plans for 1998 are more positive in the case of companies owned by Hungarian individuals. Among them (especially in the case of firms with less than 50 or more than 250 employees) the plans for increasing the number of employees in 1998 are higher than average.

In 1997 *it was not the foreign owned companies where the salaries were increased the most*, on the contrary, here the increase of salaries was lower than the average (18 per cent). The increase was higher in the case of companies owned by Hungarian individuals (19 per cent). In the groups formed according to ownership there were significant differences between the increase of the salaries. Plans concerning the increase of salaries seem to be more unanimous than the actual salary increases in 1997 but, for example, significant differences can be observed between the groups formed according to the size of the enterprises. Firms considered to be medium-size, with 101-250 employees, are planning an increase (22 per cent) which is way above the average (17 per cent). Considering that these include about 16 per cent of the companies and 21 per cent of all employees, this growth rate cannot be regarded as widespread.

Turnover

For the examination of the changes in the turnover we questioned the companies about the net turnover appearing in their balance sheets and the company tax returns[7]. According to the sample in 1996 the average net turnover was 850 million Hungarian Forints, in 1997 it was 1,035 billion HUF, and in 1998 it is expected to be around 1,251 billion HUF. In 1997 the growth rate of net turnover can be estimated (at current prices) to be around 36 per cent. The managers expect this rate to decrease in 1998 to

[7] The comparison between the tax returns and the answers given in the questionnaires by the companies belonging to the selected population show that the answers concerning the employee numbers and turnovers were accurate and that the willingness of companies with better marketing conditions was not significantly different from those under worse circumstances.

be around 19 per cent[8]. Thus, expectations for 1998 are a lot more pessimistic than the 1997 growth rate (see *table 3*). This supports the results of another survey regarding the conditions of the manufacturing industry in 1997 as well as its prospects for 1998 (*Tóth*, 1998*b*).

[8] If the growth rate of the net incomes is weighted as to the proportions of the net incomes of companies in 1997 compared to the average net incomes.

With regard to the growth rate of the turnover in 1997 between the groups formed according to majority ownership, no significant difference can be seen. In the group where the companies are owned by foreigners the growth was above the average (among these the net turnover increased by 54 per cent at current prices) but this is only due to the outstanding growth of a few companies.

According to the plans in 1998 a more moderate growth of the net turnover is probable than what was experienced in 1997. Data indicate that *enterprises owned by Hungarian companies and enterprises owned by foreigners will be able to increase their net turnover in 1998 high above the average growth*, while the real value of the turnover of those owned by Hungarian individual (using producer's price index of less than 14 per cent for the calculations) will stagnate or decrease (see *table 4*). Regarding this the sectoral influences cannot be considered significant. Accordingly, in the growth in 1998, similarly to that in 1997, the group of foreign owned companies have a decisive role but this role is *complemented by the group of medium-size and larger Hungarian private firms*. It can be expected that these will also play a decisive role in the change in growth dynamics.

Market links

Market ranges

We asked companies included in the CIPE98A survey how their output is divided according to the size of their markets. We expect that, on the one hand the growth capacities of the companies significantly differ and, on the other hand, their market links can be differently characterised according to their marketing range. We distinguish between four categories of market ranges:

1.the town in which the company is operating (local market);
2.the county in which the company is operating (local market);
3.surrounding counties (regional market);
4.the whole country (national market);
5.abroad (foreign market).

The division of the enterprises according to the above categories are included in *table 5*. From the results it can be seen that 30 per cent of the enterprises examined supply mainly to local markets: more than 50 per cent of their income comes from sales where the buyer is operating in the same town or the same county where the supplier is located. 24 per cent of the enterprises has a wider market with half of the income coming from the whole country, and the proportion of those transporting mainly abroad is around 20 per cent. The rest of the enterprises either sell mainly in one certain part of the country, or none of the defined market segments are majority within their sale. We get these proportions if we group the companies as to whether their local (town or county), regional (national, but not including the whole country), national or foreign, sales are more than 50 per cent[9].

Within these groups about one third of those with mainly foreign markets are enterprises owned by foreigners, while the proportion of those owned by Hungarian individuals is significantly smaller than the number they represent in the selected

[9] 22 per cent of the companies are active in Budapest. They only belong to the category of those supplying local markets, if they sell mainly in Budapest.

population of firms, but they are still close to 32 per cent. This means that *among the companies which are producing mainly for foreign markets the role of companies owned by Hungarian individuals cannot be neglected* (see *table 6*).

There is probably a positive relationship between the size and the dominant market segments of the enterprises which is supported by the data: the larger enterprises have higher chances to get into the group of enterprises producing for a wider range of markets. We have to add, however, that while 54 per cent of the companies producing for foreign markets have over 100 employees, there are also a lot of smaller companies in this group (28.6 per cent).

Buyers

We tried to examine another aspect of the market links with regard to the possible buyers. We questioned the companies concerning the proportions of their sales to multinational companies; to companies abroad which are not multinational; to other companies in Hungary which are smaller than they are; to ones that are larger than they are; and to the households. (Originally, we also asked questions related to public institutions but because of the small numbers we do not mention the results). If we define the buyers according to the above types we can see that the proportion of multinational companies is an average of 8.5 per cent, and firms located abroad is an average 20 per cent, while 65 per cent and 45 per cent of enterprises do not supply these companies at all (see *table 7*).

If we consider the role of the groups formed according to majority owners and size we can discern those tendencies which play a significant role in the sales of the various companies.

The sales to multinational companies from enterprises with less than 50 employees are less than average (73 per cent of them do not sell anything to them), while their importance of the role of enterprises with over 50 employees is more significant than average. The situation is similar in the case of foreign companies, too, adding that these play a more important role in the sales of Hungarian firms with over 100 employees. At the same time, companies owned by foreigners have a lot more foreign companies as buyers, than those owned by Hungarian individuals. Among the enterprises questioned it is characteristic that those owned by Hungarian individuals supply larger companies, while those owned by foreigners do not sell to Hungarian companies which are larger than they are. This is natural because firms owned by Hungarian individuals are usually smaller, while those owned by foreigners belong to the larger Hungarian companies. Enterprises which are smaller than the ones questioned only play an important part in the sales of firms with under 50 employees and no significant differences could be observed in other size categories or regarding the owners. That is, within the total sales of small enterprises the sale between them is also a likely feature. Furthermore, sales to households are also more characteristic of the smaller companies included in the sample.

For a better demonstration we summarised this in Chart no 1. It is characteristic of smaller enterprises included in the sample that they either sell to households or they are considered as the suppliers of companies larger than they are, but located within the country. Medium-size or large Hungarian enterprises are one another's business partners or most of their buyers are foreign companies. Among the former it is very characteristic of enterprises owned by foreigners that they sell to foreign located companies. These facts suggest a *three-layered structure*: at the bottom are the smaller companies producing for local markets, in the middle those supplying the regional and

national markets, and on the top are those with dominantly foreign markets. This layering indicates that the *smaller enterprises which are Hungarian-owned, producing for local markets and based on relationships between families or acquaintances, are usually not considered as the suppliers of multinational companies or other companies abroad*. The question is how and in what way this situation can be changed with the help of governmental programs. If the government wishes to help integrate Hungarian enterprises with those owned by foreigners (in Hungary or abroad), and to use high technology, it should channel these programs programmes to those *medium-size firms* which already have business relationships with foreign companies or are able to form such relationships.

Competitors

When examining the possible competitors of an enterprise we used the previously described groups of firms. Enterprises usually indicated that smaller Hungarian enterprises are important competitors (*table 8*). Considering that most of the enterprises included in the sample had less than 50 employees, this indicates that the small enterprises are not only one anothers' suppliers but are also are anothers' competitors. It could be seen in the previous section that links between multinational companies are rare and have no importance among the competitors, either.

In the examined enterprise groups the various companies compete in different ways. In table 9 we summarise the main relationships between the enterprise groups[10] in these regards. The results confirm that Hungarian firms have *segmented markets*, that is, enterprise groups of different characteristics have competitors of different sizes and market conditions.

We should add, however, that although the above results show the existence of market segments, it can also be seen that this *segmentation is not too strong* (indices of associations obtained indicate weak relationship). Presumably, these market groups do not form closed sets and passage between them is quite frequent and common.

Comparing the results related to the competitors with their business partners (the buyers) we can see that in the case of multinational companies, companies located outside the country, and enterprises larger than the firm questioned, judgment of the competitors' importance connected with the role these companies play in the sales of the firms questioned. The company group which is an important competitor also plays an important role in the sales as a buyer (see *table 9*). This effect can be explained, on the one hand, by the fact that those who do not sell to multinational companies consider the multinational companies as their competitors less than other firms, that is, *they operate in totally different market segments than the multinationals do*. It is also possible that the market positions of the observed companies as suppliers highly depends on the market position of the companies they supply. The future of a firm supplying a multinational company is greatly determined by the market possibilities of the given multinational company. On the other hand, Chart 1 also shows that larger Hungarian companies are characteristically supplying each other even though they are also competitors.

Table 9 also confirms the existence of segmented markets. If, for example, the role that multinational companies play in the sales of a firm are more important than

[10] Thus we can assume also that the sociological concept emphasising the role of business groups (*Granovetter*, 1994) is relevant also for Hungary.

the average, then it becomes less significant to consider larger Hungarian companies as important competitors. From this we can conclude that there is no real competition between Hungarian enterprises to become the suppliers of a multinational company.

Financial discipline and problems of liquidity

According to prior research there is a significant difference between enterprise groups with regard to the probability of breaching financial discipline (*Tóth – Semjén*, 1996 and *Semjén – Tóth*, 1997). According to both the 1994 and 1996 results, this phenomenon occurs significantly *less frequently among the partners of foreign-owned companies than otherwise*. We experienced just the opposite in the case of smaller, Hungarian-owned enterprises. These enterprises had partners that regularly missed payment deadlines. Considering results obtained in the middle of the nineties, we can examine how this situation changed by 1998 when the growth of the Hungarian economy became perceptible. For this reason we asked the enterprises' management to estimate what percentage of their partners do not fulfill their payment obligations regularly.

The answers show that only 13 per cent of the enterprises examined their partners did not regularly breach financial obligations. The average proportion of partners regularly breaching their payment obligations is 27 per cent and the median is 20 per cent which, similarly to previous results, shows that this occurs quite frequently. We get a more accurate picture if we examine the division of enterprises according to the extent of breaching payment obligations (see Chart 2). Here we can also see that, with the increasing uncertainty the number of enterprises which are in this situation decreases. That is, it is a phenomenon which only occurs in a limited number of enterprises.

Examining the occurrence of this phenomenon in the various enterprise groups (*table 10*) we obtain the same results as in previous research. Foreign-owned firms are less effected by the bad financial discipline of their partners than those owned by Hungarian firms and individuals. Thus, the business relationships of the former, as in 1994 and 1996, are less risky than those of the latter two groups. The proportion of partners breaching financial discipline, however, does not change significantly with regard to company sector, size, or market range.

If we take into consideration the role that the groups of buyers play in the sales, the increasing importance of enterprises larger than the ones observed is followed by the increase of the uncertainty resulting from the breach of financial discipline while with the increasing role the households play as buyers, this uncertainty decreases significantly.

The results of earlier empirical findings indicated that the financial discipline of a company's partners is closely connected to the given enterprise while the occurrence of liquidity problems increases the possibility of breaching financial discipline (*Semjén – Tóth*, 1997). During the CIPE98A survey almost 36 per cent of the firms questioned mentioned the uncertainty of supplier relationships as personal experience and the delayed fulfillment of payment obligations were even more frequent (46 per cent). Delay in the payment of taxes, however, is less common (19 per cent) because of its more expensive nature. The financial uncertainty of the enterprises questioned is reflected by the frequent presence of liquidity problems in the lives of these enterprises: 45 per cent of the enterprises questioned reported having liquidity problems in 1997. Therefore *breaching financial discipline and having liquidity problems can be considered as strongly sector-specific phenomena* (see *table 11*).

These are most characteristic of construction firms, and least characteristic of those in trade. With regard to size no significant difference could be seen. Among the groups formed according to majority ownership, as it could be expected, *it was enterprises with public ownership who fought liquidity problems most often, while foreign-owned firms had the least problems*. With regard to tax discipline, usually companies with public ownership violated the norms most often, while firms owned by foreigners or Hungarian firms are more disciplined in this area, as well.

If we compare the behaviour of the enterprise observed and its partners with regard to financial discipline we get results similar to those of the previous investigations: enterprises breaching financial disciplines can expect that most of their partners will probably break these rules, too, or the other way around (see *table 12*). This situation indicates that a more serious breach of financial disciplines is characteristic of some enterprise groups and can be well located. Similarly acting enterprises "find each other", both those who respect financial disciplines and those who don't.

Growth capability and market links

After analysing the 1997 growth capability of each enterprise, their prospective economic activities and the various aspects of their market links all that is left is to *unify the two viewpoints* and examine how the above mentioned characteristics of market links influence the growth capacities of the enterprises, if they influence them at all.

For this purpose we examined the possible effects of market links through logistic regression models. In every case the dependent variables were the extent of increase in the net turnover and the number of employees in 1997 and 1998. First the enterprise groups formed according to the range of their markets, then the effect of the relationships dominant between the various types of enterprises, and finally the uncertainty of markets (financial discipline) and liquidity problems are compared to indicators showing the growth capacities of the enterprises. We control for the company's sector, the company size and the type of the enterprise's majority ownership.

We expect that enterprises which have a wider range of markets and dominant relationships with foreign companies and which respect financial disciplines will have better business possibilities and a greater demand for labour than the other enterprises. We assume that safer, predictable and extensive market links will provide a better chance for the enterprises for development than if they had to calculate on the unreliability of their partners and the limited demand of their markets.

In the models used for estimating the changes in the number of employees and the net turnover we used variables which divided our sample into two equal parts: into *enterprises which were able to increase the number of employees and the turnover less than the average* and the rest of the enterprises. The odds[11] is estimated with the help of seven models in which, besides the company sector, the type of majority ownership and the number of employees there was always a variable with regard to the market links. Actually, in every case we tested the effect of market links on growth capability.

[11] The odds of an event occurring are defined as the ratio of the probability that it will occur to the probability that it will not. See *Stata* (1992)

Changes in the number of employees and in the net turnover in 1997

In each of the models examined we obtained a significant positive parameter in the case of foreign majority ownership which shows that *foreign ownership had a positive effect so that both in the demand for labour and in the output the increase these enterprises achieved were above average* (see Appendix 2 and 3). We can see *significant effects in the case of public owned enterprises but these are negative*. The growth capacities of these enterprises were significantly lower than those of enterprises with similar parameters but under mixed ownership. According to the model used for the estimation of the number of employees and the variable of the market range, for example, if the number of employees increased in 70 per cent of the cases within the group of enterprises under mixed ownership, then for enterprises with foreign owners this proportion is about 86.4 per cent, while among those public owned companies it is around 33.5 per cent.

From the tables in Appendix 2 and 3 we can also see that besides the above mentioned findings only two other variables to be tested seem to have a significant effect. One is the *market range*, the other the closeness of the relationship with the *multinational companies* which are buyers.

We can state, therefore, that those enterprises which only sold to local markets (in those towns or counties where their plants were located) were significantly less likely to increase the number of employees. If the proportion of enterprises which were able to increase their number of employees was 60 per cent in an enterprise group then about 45.9 per cent are those within this which sold to regional markets.

On the other hand, the existence of a supplier relationship with multinational companies somewhat increases the possibility for a change in the number of employees (by 3 per cent). That is, if 60 per cent of those belonging to an enterprise group which does not supply multinationals can increase their number of employees, then in the case of enterprises with similar compositions where more than 20 per cent of the total sale relates to multinational companies, the proportion of enterprises able to increase their number of employees is estimated to be around 76 per cent.

In the case of the other factors regarding market links no significant effect can be seen. This indicates that there is a big difference, a *detachment between Hungarian enterprises selling to local and other type of markets, and those suppling to multinational companies and the rest of enterprises*.

The growth prospects, however, are not effected by these factors but by the type of ownership, namely, whether *foreigners, the state or the local government have significant effect.* Resulting from the fact that the breaching of financial discipline has become a general practice as well as from the frequency of liquidity problems the growth perspectives are estimated to be the same for both those which are considered to be "good" from this point of view and for those which are "bad".

We can draw almost exactly the same conclusions from the estimation of the change of sales in 1997 (see Appendix 3). The only difference is that besides the above factors we can include the sectoral effect: in each model companies belonging to the construction industry were significantly more often among those reaching a growth rate above the average (17.8 per cent).

Employment and turnover - forecasts for 1998

The models show that among enterprises owned by Hungarian individuals the number of those which plan to increase the number of employees by more than 3.4 per

cent is significantly higher than in the reference category, that is, among those with mixed ownership. Even if we take into consideration that this is only a plan which can fail because of the actual economic performance of the enterprises, e.g. because of the regional shortage of labour(mainly professionals), we can interpret this data as a modest plan for expansion of Hungarian enterprises with private owners.[12]

[12] In two models the effects are positive in the case of foreign ownership, too, and in six the number of employees has a negative effect, but these effects are only significant in 10 per cent of the cases.

There are significant differences, however, among enterprises grouped according to the range of their markets. On the one hand, if production for local markets is dominant it decreases the probability for a higher than 3.4 per cent increase in the number of employees (if foreign sales are dominant in a enterprise group, this proportion is 55 per cent, while in the case of enterprise groups producing mainly for local markets this is estimated to be 37 per cent). *On the other hand, the plans of enterprises producing for regional markets make a more dynamic increase in the number of employees possible.* According to this, in 1998 enterprises producing for regional markets will increase the number of employees more energetically than enterprises with other market ranges. This indicates a change in the tendencies of 1997: enterprises which will increase the number of employees will probably not come from among those owned by foreigners, but more likely from *enterprise groups including a wider range of firms, those owned by Hungarian individuals and producing for regional markets.*

The prospective change of the turnover is determined by other effects. This is indicated by the fact that while the direction of the effects the size of markets have not changed, foreign ownership, similarly to the situation in 1997, has favourable effects. Just like in 1997, regarding the (expected) growth of the turnover in 1998, it is enterprises owned mostly by foreigners where an above average growth is more probable. Let us examine, for example, the parameters of the model containing business relationships with multinational companies. If in the enterprise group with mixed ownership the proportion of enterprises increasing their sales by over 12.3 per cent is estimated to be 60 per cent, than it is probably around 74.6 per cent in groups of foreign owned firms with the same parameters.

Another effect is related to enterprises owned by Hungarian individuals. Here we can see that the prospects of these enterprises are significantly less favourable in each of the models than in the case of companies with mixed ownership chosen for comparison. Similarly to 1997, therefore, in 1998 it will not be the enterprises owned by Hungarian individuals who are more likely to be able to increase their turnover above average. On the contrary, these will probably stagnate or fall behind.[13]

A closer relationship with a multinational company also bode well for of more optimistic prospects, although this relationship, similarly to the situation in 1997, is quite weak and not significant at the 5 per cent level.

Conclusions

The results of the investigation indicate that in relation to Hungarian enterprises it is not irrelevant to talk about sets of companies separated according to their various orientations and marketing ranges. These groups, which might stretch over from one sector to the other, are made up of enterprises of the same size, their competitors or business links are among similar enterprises and their market ranges are probably also similar. On the other hand, we can observe a detachment of the firms with regard to their behaviour in terms of financial discipline, according to the theory that "those which are alike attract each other".

[13] We can see that, while companies owned by private persons wish to expand the number of their employees at a rate above the average, they don't expect a larger increase in their turnover than the other companies. This latter prospect greatly decreases the possibility for the realisation of the former.

Overall we find that *foreign ownership* has a decisive role. Where there is majority foreign ownership most firms' business links, market ranges as well as financial discipline characteristically differs from other firms'.

Besides proving the existence of sectors we could also see that these are not closed market circles. On the contrary, we are talking about a *dominant group or dominant groups* as the network of relations each enterprise has is far-reaching, and at the same time it can belong to several of the sets we defined, or can be transferred from one set to the other.

This movement may be the other characteristic of the Hungarian entrepreneurial sector during the transformation. We are talking about a situation where not only the market links of the companies can be rearranged in a hurry, out of necessity, or as a result of managerial decisions, but the orientation of their market, their profile and size, as well.

During the examination of the segmentation we found greater differences in three of the segments, along which relatively well separable enterprise groups can be determined. *These are: foreign versus domestic ownership, local market versus markets beyond the range of local markets, and close supply relationships with multinational companies versus the absence of such relationships.* If we examine the market conditions, growth or market behaviour of enterprises then the above mentioned differentiating criteria determine enterprise groups of considerably different characters.

Beyond the above mentioned three dychotomies a further difference can be seen with regard to financial discipline. While most enterprises have to accept that their partners will probably breach financial discipline this phenomena occurs most frequently in only a small group of enterprises.

If corporate growth is examined in relation to the segment-forming criteria (ownership, market range, relationship with multinational companies) it can be seen that the above factors have a strong and considerable effect on this. It is no surprise news that in 1997 the turnover of foreign-owned firms grew more significantly than other firms'. *But it is surprising that the same can be expected in 1998, too, and the demand for labour on the part of foreign-owned firms is also greater than among other firms*. According to the results of the models foreign ownership in itself increased the possibility that there was an increase in a firms' number of employees in 1997 when in the whole of the national economy the number of people employed did not increase.

On the other hand, the division of enterprises according to the range of their markets can be well observed. From this aspect it is decisive whether the enterprise mainly supplies to local markets or its buyers are from a wider area. *If the enterprise only supplies to local markets then with regard to the increase or change of its sales we can see that there was less of a chance to detect signs of the growth of this enterprise and it will probably stay the same in the near future*. It is necessary to know that enterprises satisfying local demand make up almost one third of the entrepreneurial sector, so this group is not negligeable.

The other factor, the existence of close supply relationships with multinational companies, specifies a group in which the growth capability of the enterprises is significantly higher than that of the other firms'.

Finally, we cannot avoid returning to dilemma related to overall macroeconomic growth perspectives. The results obtained suggest that growth registered in the Hungarian economy in 1997 *cannot be considered virtual or resulting from the*

accounting-techniques of a few companies. Knowing that this process is remarkably concentrated and easy to spot (*Tóth*, 1998*b*), we can establish with certainty that this growth is the result of real processes. The basis for this is created by the *changes in markets and structures which has been taking place in Hungary since the beginning of the nineties,* as well as the often involuntary, but necessary firm-level measures (transformation of structure, change of profile, change of markets, restructuring of market links), already taken by most of the enterprises.

On the other hand, the dilemma of dual pattern of development can still be considered as relevant. If the growth can be well localised and does not affect most firms and instead we find that the smaller enterprises stagnate or even fall back, then it is relevant to talk about the *splitting of the Hungarian entrepreneurial sector into two or more parts* (not only in the geographical sense) or about island-like, isolated growth. The different growth prospects of enterprises producing for local markets and firms supplying to multinational companies confirm the relevance of this interpretation.

The question of equalisation or polarisation does not seem irrelevant, either. The surveys did not supply direct information on the variation of these dimensions but our analysis shows that polarisation revealed in 1996 or 1997 seemed to be easing up by 1998. If plans regarding the 1998 growth can be realised, then we expect a more widespread growth in Hungary in the near future but, as we have seen, it will not affect significant groups of Hungarian enterprises.

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Annex

Table 1

The growth in the number of employees and earnings between 1996-1998 in Hungary

	Mean	Standard error	Median	N
Number of employees in 1996 (persons)	117.91	14.60	46.57	282
Number of employees (persons)	120.63	14.14	49.56	285
Expected number of employees in 1998 (persons)	148.48	47.34	52.00	283
Growth in the number of employees in 1997 (1996=100 p.c.)	104.8	1.7	100.0	275
Expected growth in the number of employees in 1998 (1997=100 p.c.)	109.7	4.4	103.4	282
Growth in earnings in 1997 (1996=100 p.c.)	116.4	1.0	119.0	284
Growth in earnings in 1998 (1997=100 p.c.)	117.4	0.6	115.0	286

Source: own survey (as explained in the main text).

Table 2

The average growth of the number of employees and earnings with regard to the majority ownership of companies between 1996-98
(in per cent)

Type of majority ownership	Growth in number of employees in 1997 (1996=100 p.c.)	Expected growth in number of employees in 1998 (1997=100 p.c.)	Increase of earnings in 1997 (1996=100 p.c.)	Expected increase of earnings in 1998 (1997=100 p.c.)
Foreign	113.5	119.4	117.7	116.7
Hungarian private firm	99.9	102.9	111.5	117.6
Hungarian individual	103.7	112.6	119.0	118.2
Public	95.7	99.5	117.1	114.2
Mixed ownership	111.3	103.0	112.7	115.4
Total sample	104.8	109.8	116.4	117.4
F =	2.1263	0.4314	2.4401	0.8490
F sign.	0.0778	0.7859	0.0472	0.4952
Eta	0.1748	0.0787	0.1838	0.1093
N	275	282	284	286

Source: as in table 1.

Table 3

Growth of net turnover in 1996-1998

	Mean	Standard error	Median	N
Growth of net turnover in 1997 (1996=100%)*	135.6	4.7	124.1	374
Growth of net turnover in 1998 (1997=100%)*	118.9	1.2	119.8	379

Note: * weighted as to the proportion of the company's 1997 net turnover as compared to the average net turnover

Table 4

Growth of net turnover expected in 1998 in company groups formed according to majority ownership
(*in per cent***)**

Type of majority ownership	Mean	Mean*	Median
Foreign	122.2	122.0	116.3
Hungarian private firm	124.9	125.4	118.8
Hungarian private person	112.2	113.3	109.2
Public property	112.7	116.0	109.3
Mixed ownership	110.5	107.5	110.3
Total sample	115.8	118.9	112.3
F =	3.8212	F sign. = 0.0049	
Eta	0.2299		
N	279		

Note: * weighted as to the proportion of the company's 1997 net turnover as compared to the average net turnover

Table 5

Distribution of companies in 1997 according to their market
(*in per cent***)**

	Distribution of sales				
	0 p.c.	1-20 p.c.	21-50 p.c.	51 p.c. and above	Total
Town	30.9	34.1	15.8	19.2	100.0
County	35.0	42.4	12.7	9.9	100.0
Neighboring counties	47.7	38.3	14.0*	–	100.0
National	29.5	27.9	18.8	23.8	100.0
Abroad	43.1	26.3	10.5	20.1	100.0

(N=269)
Note: * above 20 per cent

Table 6

Distribution of companies according to the dominant sectors of their markets, the type of majority ownership and the size of the company
(*in per cent*)

	More than half of the sales are directed to the given market sector			
	Local	Regional	National	Foreign
Type of majority ownership				
Foreign	**(2.6)**	(6.5)	14.7	**31.0**
Hung. company	21.1	27.1	15.8	19.9
Hung. individual	59.2	58.7	52.6	**31.6**
Public	(6.4)	(1.5)	(3.0)	(0.9)
Mixed	10.7	(6.1)	(13.8)	(16.5)
Total	100.0	100.0	100.0	100.0
N	87	64	64	54
Cramér's V = 0,22098*				
Categories according to employee number				
- 50	60.5	67.7	44.8	**28.6**
51-100	25.4	10.2	29.5	(17.6)
101-250	(6.9)	13.2	16.9	**33.6**
251-	(7.2)	(9.0)	(8.8)	**20.3**
Total	100.0	100.0	100.0	100.0
N	85	62	63	54
Gamma = 0,33330				

*: $p < 0,01$
Note: Proportions which significantly differ from the expected values are written in bold letter ( ): the number of cases is less than 10

Table 7

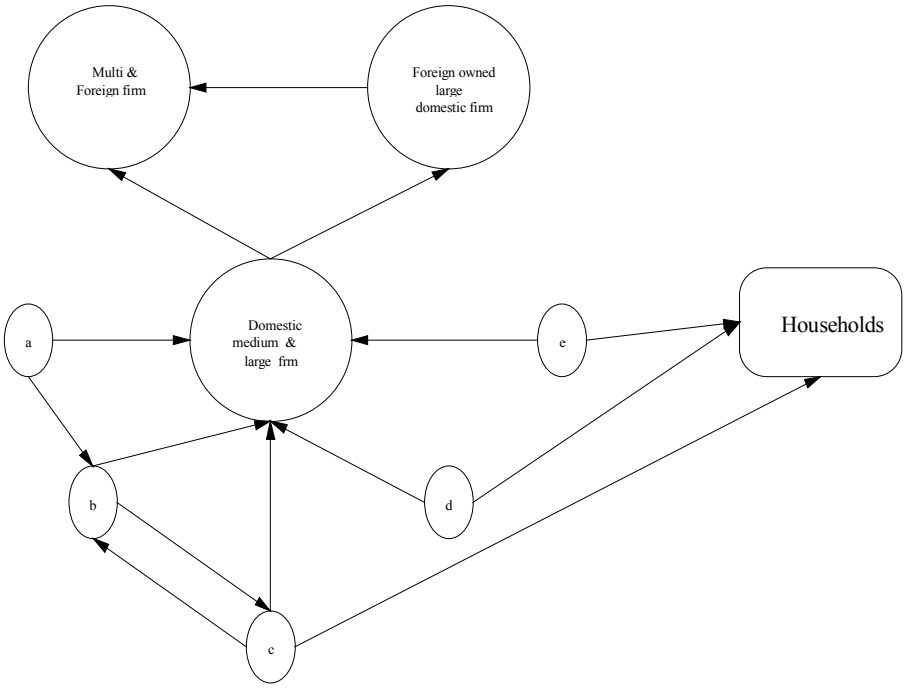
Distribution of companies in 1997 according to the proportions of their sales to various buyers
(*in per cent*)

	Distribution of sales				The average proportion of sales to the given buyers (p.c.)	N
	0 p.c.	1-20 p.c.	21-50 p.c.	51 p.c. and above		
Multinational company	64.4	23..2	12.4	-	**8.5**	272
Foreign companies	44.5	29.5	10.0	16.0	19.5	272
Smaller Hungarian firm	22.0	44.7	23.9	9.4	19.9	272
Larger Hungarian firm	20.1	31.1	27.2	21.6	**29.4**	272
Households	49.3	33.8	6.0	10.9	14.1	272

*Note**: above 20 per cent.

Chart 1

Characteristic directions of sales between the economical actors



Note: Companies a,b,c,d,e employ maximum 50 people and are characteristically owned by Hungarian private persons. The arrows show sales which are more likely than expected to take place between various economic actors.

Table 8

The importance of competitors in 1998
(*in per cent of respondents***)**

	Very important 5	4	3	2	Not important 1	Mean
Multinational companies	23.4	12.7	13.4	8.9	41.6	2.67
Foreign companies	19.4	14.5	15.8	14.0	36.2	2.67
Larger Hungarian firms	16.3	21.5	20.8	18.2	23.2	2.90
Smaller Hungarian firms	33.5	21.1	17.4	8.5	19.5	3.41
Others	2.2	1.8	0.4	2.1	93.4	1.17

(N =275)
Source: as in table 1.

Table 9

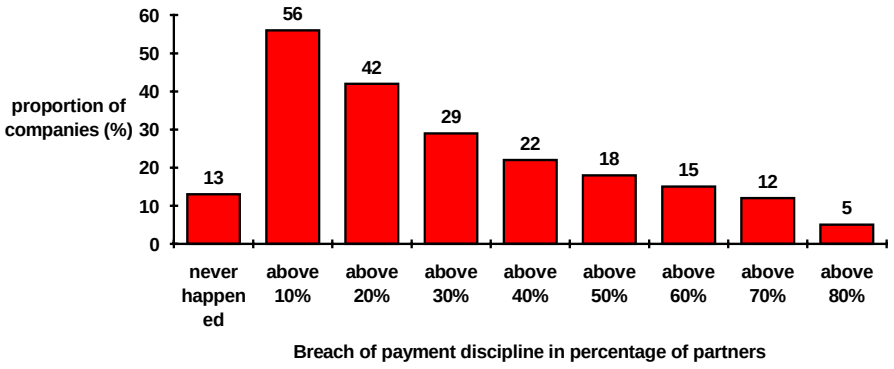
Relationships among the groups of companies as competitors and as buyers*

	Role of competitors			
Proportion of buyers in the sales	Multinational companies	Companies located abroad	Larger Hungarian firms	Smaller Hungarian firms
Multinational companies	**0.44055**	**0.17845**	**-0.18055**	-0.07823
Companies located abroad	-0.04756	**0.53573**	**-0.17297**	**-0.18106**
Larger Hungarian firms	-0.09948	**-0.20432**	**0.27263**	0.04828
Smaller Hungarian firms	0.13972	0.01040	-0.04435	0.11465

Note:*: The cells contain the values of the Gamma coefficient. Those, where the Gamma value/its standard error are more than 2 written in bold.
Source: own calculation based on survey results.

Chart 2

Distribution of the observed companies according to the financial discipline of their partners



Source: own calculation based on survey results.

Table 10

Breach of financial obligations in various company groups in Hungary in 1998
(*in per cent*)

		Proportion of partners breaching payment obligations	Standard deviation
Type of majority owner			
	Foreign	16.0	22.4
	Hungarian company	30.2	30.0
	Hungarian individual	30.4	27.7
	Public	26.2	25.3
	Mixed	20.1	24.9
	F= 2,5460 F sign. = 0,0399		
	Eta= 0,1934		

Source: own calculations.

Table 11

Quality of supply networks, financial discipline in the various groups of companies*

Company characteristics	Uncertain supply networks (1)	Late fulfillment of financial obligations (2)	Late payment of social insurance contribution (3)	Late payment of other taxes by the company (4)	Liquidity problems (5)
Sectors					
Manufacturing	36.6	**49.0**	**19.8**	**19.2**	**49.7**
Construction	41.8	**55.8**	**28.4**	**21.4**	**66.3**
Trade	32.9	**32.5**	**(11.3)**	**(10.4)**	**23.3**
Employee number					
- 50	32.2	40.3	18.5	20.4	40.1
51-100	36.5	44.4	20.1	19.3	50.9
101-250	46.5	62.5	(17.0)	(15.2)	53.7
251 -	46.8	51.6	(21.0)	(15.6)	50.5
Majority ownership					
Foreign	29.3	29.3	(16.3)	**(12.6)**	**(28.7)**
Hungarian company	41.0	48.9	(9.3)	**(9.2)**	**43.0**
Hungarian individual	37.6	48.4	22.3	**23.0**	**50.6**
Public	(32.5)	(54.0)	(45.1)	**(45.1)**	**(78.1)**
Mixed ownership	33.0	43.6	(15.1)	**(15.6)**	**34.1**
Proportion of yes answers in the sample	36.5	45.8	18.9	18.8	45.3
N	271	269	269	269	269

*Note:** The cells show the proportion of yes answers within each category of company characteristics.
(): the number of cases in the cell is less than ten
Remark: in the case of cells written in bold the value of the Cremér's V which showed the relationship between the two factors was significant at the 5 p. c. level.

Source: own calculations.

Table 12

Breach of financial discipline by the company and among its partners
(*in per cent*)

	At least 20 p.c. of the company's partners were usually late in fulfilling their financial obligations		
The company questioned was late in fulfilling its financial obligations	Yes	No	Total
Yes	60.2	31.4	46.0
No	39.8	68.6	54.0
Total	100.0 (134)	100.0 (130)	100.0 (264)

(Phi = 0,28895, sign. = 0,0000)

Source: own calculations.

Supplement

A1. Database and indicators used

CIPE98A sample

The survey carried out between February 20-April 1, 1998 was part of a joint research titled "Taxation and market environment of small and medium sized enterprises in Hungary", carried out by the CIPE and the KOPINT-DATORG Foundation of Economic Research. The selected population of firm includes 3390 companies which fulfill the following requirements: they belong to the manufacturing, construction or trade industries and, according to the HCSO (Hungarian Central Statistical Office) report their number of employees was over 20 in December 1996. The sample for questioning was supplied by the HCSO. The survey was carried out by sending out self-completed questionnaires by mail.

In the questionnaire we asked four questions from the companies' management. These were related to basic economic figures (number of employees, net turnover, investment); other economic indicators (e.g. ownership structure, date of establishment); the managers' estimates and opinion (e.g. increase of earnings in the past year; distribution of sales as to market links and segments; types and quality of competitors); and their intentions for the future (e.g. prospective growth rate of earnings, prospective change in the number of employees and the sale).

As in the case of self-completed questionnaires the larger companies are more willing to answer than the small ones, our sample contains more larger companies, too, than what could be expected from their proportion within those questioned (see Table A1). This problem can be solved by weighting the sample according to the distribution of the population of firm as to size. During the analysis we used data obtained after weighting.

A1. The CIPE98A sample and the distribution of the selected population of firm as to sectors and categories of employee numbers

Sectors	Selected population of firm %	Sample questioned %
Food products, beverages and tobacco products	8.8	6.3
Textiles, clothing, leather and fur products	20.2	12.5
Timber, paper and printing industry, Publishing	6.3	4.9
Chemical industry	4.6	5.9
Non-metallic mineral products	2.6	3.8
Metallurgy and metal treatment	7.6	9.4
Engineering industry	13.7	21.5
Other manufacturing industries, recycling	2.5	2.4
Construction	16.9	16.3
Trade	26.9	17.0
Total	100.0	100.0
N	3389	288
Categories according to number of employees		
Above 300	8.0	17.0
51 - 300	37.5	44.4
21-50	54.5	38.6
Total	100.0	100.0
N	3318	277

A2. The logistic regression of the dynamics of the 1997 change in the number of employees1

Independent variables	Dependent variable = Dynamics of the 1997 change in the number of employees (DL76D)						
	M1 Market range	M2 Multinational	M3 Foreign	M4 Hungarian larger comp.	M5 Hungarian smaller comp.	M6 FPROB+FDISC	M7 FPROB + P. fin.discipline
Sector							
Manufacturing							
Construction	1.6171^{+}						
Trade (reference)							
Type of majority ownership							
Foreign	2.7376**	3.4141**	3.2584**	3.5084**	3.7667**	3.1791**	3.1269**
Hungarian company							
Hungarian individual							
Public	0.2158**	0.1659*	0.1738*	0.1630**	0.1514**	0.1731*	0.2001*
Mixed (reference)							
Number of employees							
Market range							
Local	0.5649**						
Regional							
National							
Foreign (reference)							
Multinational company		1.0307**					
Foreign company							
Larger Hungarian firm							
Smaller Hungarian firm							
FPROB							
FDISC							
Financial discipline of partners							
N	251	256	256	256	256	252	249
-2 log likelihood	317.993	316.192	325.250	326.230	325.497	320.068	316.515
Model Chi^2	27.889	30.771	21.713	20.734	21.467	21.737	18.360
Pseudo R^2	0.081	0.089	0.063	0.060	0.062	0.064	0.055

1: In the logistic regression models in every case the exp(b) values are shown in the cells. The faintly shadowed cells show variables not including in the model. We only show parameters which are significant at 10% level.

+: $p < 0,10$, *: $p < 0,05$, **: $p < 0,01$

A3. The logistic regression of the dynamics of the 1997 change in the net turnover

Independent variables	Dependent variable = Dynamics of the 1997 change in the net turnover (DQ76D)						
	M1 Market range	M2 Multinational	M3 Foreign	M4 Hungarian larger comp.	M5 Hungarian smaller comp.	M6 FPROB+FDISC	M7 FPROB + P. fin.discipline
Sector							
Manufacturing	0.6613+						
Construction	2.7348*	2.3367**	2.4210**	2.4155**	2.3729**	2.3518**	2.4623**
Trade (reference)							
Type of majority ownership							
Foreign	2.6107**	2.4845*	2.5144*	2.6566**	2.6687**	2.4483*	2.8658**
Hungarian company	1.7408+		1.7656+	1.7629+	1.7463+	1.8330+	1.7037+
Hungarian individual							
Public	0.1336**	0.1381**	0.1332**	0.1264+	0.1263**	0.1257**	0.1296**
Mixed (reference)							
Number of employees							
Market range							
Local	0.6340+						
Regional							
National							
Foreign (reference)							
Multinational company		1.0144+					
Foreign company							
Larger Hungarian firm							
Smaller Hungarian firm							
FPROB							
FDISC							
Financial discipline of partners							
N	251	256	256	256	256	252	249
-2 log likelihood	326.507	333.120	336.203	336.454	336.505	330.426	323.082
Model Chi^2	24.809	23.155	20.072	19.821	19.771	21.598	21.631
Pseudo R^2	0.071	0.065	0.056	0.056	0.053	0.064	0.063

+: $p < 0,10$ *: $p < 0,05$ **: $p < 0,01$

A4. The logistic regression of the dynamics of the change in the number of employees expected in 1998

Independent variables	Dependent variable = Dynamics of the change in the number of employees expected in 1998 (DL87D)						
	M1 Market range	M2 Multinational	M3 Foreign	M4 Hungarian larger comp.	M5 Hungarian smaller comp.	M6 FPROB+FDISC	M7 FRPOB + P. fin.discipline
Sector							
Manufacturing							
Construction							
Trade (reference)							
Type of majority ownership							
Foreign			1.8884^{+}		1.8264^{+}		
Hungarian company							
Hungarian individual	1.5719*	1.7203*	1.6563*	1.7363*	1.6944*	1.7198*	1.6317*
Public							
Mixed (reference)							
Number of employees	0.9830^{+}	0.9816^{+}	0.9844^{+}	0.9837^{+}		0.9838^{+}	0.9821^{+}
Market range							
Local	0.4891**						
Regional	2.1464**						
National							
Foreign (reference)							
Multinational company							
Foreign company							
Larger Hungarian firm							
Smaller Hungarian firm							
FPROB							
FDISC							
Financial discipline of partners							1.6416^{+}
N	256	260	260	260	260	257	254
-2 log likelihood	325.628	345.106	343.815	344.086	343.982	343.637	330.306
Model Chi^2	33.900	18.856	20.147	19.876	19.980	16.478	21.983
Pseudo R^2	0.094	0.052	0.055	0.055	0.055	0.046	0.062

+: $p < 0,10$ *: $p < 0,05$ **: $p < 0,01$

A5. The logistic regression estimation of the dynamics of the change in the net turnover expected in 1998

Independent variables	Dependent variable = Dynamics of the change in the net turnover expected in 1998 (DL87D)						
	M1 Market range	M2 Multinational	M3 Foreign	M4 Hungarian larger comp.	M5 Hungarian smaller comp.	M6 FPROB+FDISC	M7 FDISC + P. fin.discipline
Sector							
Manufacturing	0.6411*						
Construction							
Trade (reference)							
Type of majority ownership							
Foreign		1.9606+	1.9077+	2.0681*	2.0603**	2.1837**	2.5144**
Hungarian company							
Hungarian individual	0.5247*	0.5786**	0.6098**	0.5927**	0.5931**	0.5625**	0.5279**
Public							
Mixed (reference)							
Number of employees							
Market range							
Local	0.4087**						
Regional	1.6252**						
National							
Foreign (reference)							
Multinational company		1.0155+					
Foreign company							
Larger Hungarian firm							
Smaller Hungarian firm							
FPROB							
FDISC							
Financial discipline of partners							1.6047+
N	253	256	256	256	256	253	250
-2 log likelihood	323.394	339.244	342.353	343.336	343.337	338.077	327.784
Model Chi^2	31.701	19.422	16.313	15.330	15.329	16.940	19.606
Pseudo R^2	0.089	0.054	0.045	0.043	0.043	0.048	0.056

+: $p < 0,10$ *: $p < 0,05$ **: $p < 0,01$