CORPORATE INVESTMENT FINANCE, 1992–1997*

KATALIN GÁBRIEL[1] – ERZSÉBET GETHER[2] – ANTÓNIA HÜTTL[3]

SUMMARY

The paper deals with the investigation of the structure of corporate investment financing. The data of Hungarian firms are compared in several relations. The international comparison focuses on the question to what extent the composition of investment finance in Hungary is similar to the characteristics of the developed market economies. Changes in the sources of finance during the 1992–97 transition period are also analysed. Sets of the Hungarian firms have been classified according to various criteria in order to detect to what extent the enterprise characteristics influence the availability of financial sources.

KEYWORDS: Financial structure; Internal – external sources; Investment.

The aim of this research is to investigate the financial structure of corporate investment. Investment financing is a way to combine various sources, either external (e.g. borrowing or raising new equity) or internal ones (e.g. retained earnings generated in production or by other operations). There are costs and utilities connected both to the users and to the providers of the funds. The firm considers interests paid on borrowing as cost, whereas utility is the profit generated by these funds. The borrower sizes up mainly the risk connected to the transfer of management rights over the funds opposed to the expected yields.

The research applies empirical methods. Data of Hungarian firms are compared in several relations. International comparison focuses on the question to what extent the composition of investment finance in Hungary is similar to the characteristics of the developed market economies. Changes in the sources of finance during the 1992–1997 transition period are also analysed. The population of the Hungarian firms have been classified according to various criteria in order to detect to what extent the characteristics of the enterprise influence the availability of financial sources.

* The paper is based on the ACE project (P96-6081-R) Financial Flows and Debt Structure in Transition and Market Economies. (Co-ordinator: *Robbie Morchie.* Heriot Watt University. Edinburgh. UK)

[1] Head of department (Financial Statistics Department) HCSO.
[2] Head of section (Financial Statistics Department) HCSO.
[3] Consultant, HCSO.

1. Research methodology

Empirical results indicating the composition of corporate financing are difficult to compare due to methodological differences. In most cases corporate balance sheet data are used, therefore national differences in business accounting rules among countries may heavily distort the results. In some instances significant variance may be found in accounting practices also within one single country. Because of these inherent methodological problems the efforts to compare detailed data of different enterprises at international or even at national level can be only partially successful. It implies as many sets of data as many results and conclusions. The strength of our analysis – in this respect – lies in the detailed data set of enterprises, which enables us to compose homogeneous series.

Even if the differences in business accounting practices are disregarded, additional methodological problems may arise. There are two basic ways of examining the structure of the financing of firms by statistical methods: in the economic literature these are usually referred to as gross versus net sources methodology.

The *gross sources methodology* investigates the structure of financing all long term investments, where either financial or physical investments are concerned. The *net sources methodology* analyses the structure of financing physical (real capital) investments only. As a matter of fact, in economic sense the way of financing real capital inputs (as a factor of production) is the relevant question. Therefore the choice between the gross and net sources methods depends on the assumption: 'What is the ultimate purpose of financial investments in non-financial enterprises'. If financial investments are considered as pure financial portfolio activities, where the enterprise invests assets on financial markets or as bank deposits expecting interest and/or capital gains in return, then the net sources method is the appropriate one. If the term financial investments (as recorded in the balance sheets) mainly includes direct capital investments from the headquarters to subsidiaries, then financial investments are understood as a way of creating productive real capacities like physical investments at headquarters do. In this situation it is realistic to assume that similar considerations (cost of capital, risks etc.) influence the decision on choosing among various financial funds. It can be argued, therefore, that the gross sources method is the relevant one.

The data come usually from financial business reports which record only the major classes for assets and liabilities, sources and uses. Outward direct investments are not recorded separately. Because of the lack of additional information, at enterprise level the ultimate purpose of financial investments is not to be identified. It means that statistical observations do not help to classify financial investments either as direct or as portfolio.

In order to support the choice between gross and net sources methods we had to rely on the assumption as follows:

– in developed market economies financial investment of non-financial enterprises cover mostly direct investments in subsidiaries,

– whereas in Hungary – in the transition period 1992–1997 – financial investments of non-financial firms – if any – covered mostly the purchase of government securities or deposits in banks.

It implies that

– gross sources methodology is applied for international comparison, when the financial structure of Hungarian firms is compared to that of some selected EU member states, and

– net sources methodology is applied for analysing at enterprise-group level the composition of financing in the Hungarian economy.

A simplified 'Sources and Use of Funds' table[4] illustrates the differences between gross and net sources methodology as follows:

Uses	Sources
	11. Non-financial sources, total
	12. of which: retained profit
	13. depreciation
	14. provisions
1. Long term financial investments	*15*. Changes in long term external liabilities
2. Short term financial investments	*16*. Changes in short term external liabilities
	17. Issued capital
3. Gross fixed capital formation	
4. Changes in stocks	
5. Uses, total	*18*. Sources, total

The gross sources method estimates the composition of long term – financial and physical – investments {(1) + (3) + (4)} as follows:

Share of non-financial sources: (*11*) / { (1) + (3) + (4)}
Share of financing by creditors: (*15*) +(16-2) / {(1) + (3) + (4)}
Share of equity finance: (*17*) / {(1) + (3) + (4)}

The net sources method estimates the composition of long term physical investments {(3) + (4)} as follows:

Share of non-financial sources: (*11*) / {(3) + (4)}
Share of financing by creditors:(*15*-1) +(16-2) / {(3) + (4)}
Share of equity finance: (*17*) / {(3) + (4)}

It is evident that in both cases the shares add up to one.

Within the two main streams of methods several sub-variations may exist depending on how individual items derive from the accounting reports of an enterprise are classified. For example whether loans received from companies with majority interest in the firms are classified as loans or as equity finance, or whether provisions for employees' pension funds are considered as the firm's own or external sources.

[4] In many cases the sources and use of funds table is compiled as the differences of closing and opening balance sheets. (This may distort the data if revaluation are not recorded separately.)

Comparing the formulae for net and gross methods, it is easy to demonstrate that in an enterprise which is financially expansive (the value of long term financial investments is > 0), the net method shows a larger share of non-financial internal sources and equity financing, whereas the share of financing through financial intermediaries seems to be less important.

As *Shaffer* (1999) shows in a remark to *Corbett* and *Jenkinson's* study (1997), the net sources method may be misleading in certain circumstances, because during a steady-state growth at aggregate level it concludes that total investment is financed exclusively via retained earnings. Debt financing is netted out. This statement is a further argument for our choice to apply gross method at aggregate level. At the level of different groups of enterprises the assumption of steady state growth is less realistic, therefore the use of the net sources method should not distort the results by underestimating the level of debt financing.

Our research compares the composition of the financing of enterprises in two aspects. The first one is an international comparison seeking to find to what extent the debt structure and corporate financial flows in Hungary converge to the developed EU member economies. The international data derive from 'ready-made' publications. The second approach focuses on various enterprise groups in Hungary and tries to identify the factors, which explain the differences both in the structure and the changes of the composition of financial sources.

The composition of financing as percentages are presented in tables. In most cases the differences between the structures are obvious. In order to illustrate the results in an aggregated form too, a quadratic distance measure has been defined. Each composition of financing as percentages has been taken as a point in the three dimensional space. The distance of two points is calculated as follows:

$$d = \sum_{i=1}^{3} (x_i - y_i)^2 ,$$

where x_i and y_i denote the shares to be compared. If the two distributions are the same, d takes its minimum value (d=0), while in case of maximum dissimilarity d=2, unless negative percentages occur.

2. Data sources

In order to produce comparable and robust results, a simplified structure of financing is analysed. We used business balance sheets, flow data were estimated as differences in the levels of stocks between subsequent years.

For EU member countries most data were taken from the annual OECD publication *Non-Financial Enterprises Financial Statements*, OECD 1994. The data are fairly heterogeneous as regards the coverage of the sample and the accounting principle followed by the individual countries. The OECD publication made no attempt to harmonise the basic materials available in the countries, instead of that it allows the countries to present different tables and encourages them to provide detailed notes and explanations which may orientate the users. For an international comparison we rearranged the original data

and compiled a uniform set of tables for each country. For this aim we made use of the footnotes and methodological explanations attached to the tables.

In the case of Germany the data supplied to the OECD publication were heavily fragmented. Therefore the data supplied in a publication of the Deutsche Bundesbank have been used instead.

In the case of Hungary, a detailed data set is at our disposal. We have access to the database maintained by the Hungarian Central Statistical Office. This database includes the annual corporation tax declarations of all enterprises obliged to submit such a declaration. There are about 200 thousand units in the database. For the large enterprises the information derived from the tax declaration is supplemented by a special statistical questionnaire, which provides detailed information on various flows and stocks, e.g. on the changes in the stocks of fixed assets. The balance sheets of these large enterprises are also collected. The database covers the period 1992–1997.

The data for the large corporations are considered highly reliable due to the fact that

– tax data are usually of high quality,
– the data are checked by statisticians,
– missing data are substituted and reconciled.

The project makes use of the data of these nearly 4000 large enterprises. This subset provides a fairly good coverage of the universe of the Hungarian corporation sector, represented by the figures of the year 1994.

Table 1

The main indicators of the Hungarian corporation sector

Indivator	Non-financial corporations with limited liability, total	Large corporations	Share (percent)
Number of enterprises	76 672	3 394	4.4
Total assets (billion HUF)	8 647	5 993	69.3
of which: invested assets (billion HUF)	5 347	4 074	76.2
current assets (billion HUF)	3 189	1 872	58.7
Owners equity (billion HUF)	4 913	4 022	81.9
Sales turnover (billion HUF)	8 171	4 667	57.1
Trading profit/losses (billion HUF)	129	107	82.9
Gross fixed capital formation (billion HUF)	507	327	64.5

From the nearly 4000 large enterprises we have selected a subset of about 1500 units. These are the firms which were operating during all those years between 1992–1997 and so their life paths could be followed at individual level. We will refer to them as the subset of *permanently functioning firms*.

Within the subset of permanently functioning firms *fixed capital investors* (FCI) form an even more homogeneous group of enterprises. They are defined as follows: a firm is called FCI if the changes in the value of tangible and intangible assets between the closing and opening balance sheet is positive. The number of FCI firms is about 700-800, with some fluctuations during the period.

The research concentrates on large corporations. The reason for this delimitation is twofold. It is well known that in the period 1992–1997 small and medium size firms could obtain hardly any external sources for investment financing. Therefore economic behaviour concerning the choice among alternative sources is relevant only to large corporations. In addition, the quality of data available for small and medium size firms is also limited concerning their analytical value.

3. International comparison – gross sources method[5]

First we put Hungary in an international framework and analyse the relation of the srtucture of investment financing of Hungary and 10 developed countries. The basic results can be seen in Table 2.

Table 2

Investment financing structures
(annual average, percent)

Country	Gross income finance	of which:		Financing through intermediation	Financing by direct sources	*Total*
		depreciation	net profit			
France	56.4	47.1	4.0	25.0	18.6	*100.0*
United Kingdom	42.4	36.2	6.1	15.1	42.5	*100.0*
The Netherlands	71.9	48.8	23.1	11.9	16.2	*100.0*
Austria	105.0	79.6	–	-1.6	-3.4*	*100.0*
Finland	61.1	49.1	12.0	29.6	9.3	*100.0*
Spain	63.4	74.8	-11.4	15.8	20.8	*100.0*
Italy	67.8	44.1	4.9	17.0	15.2	*100.0*
Belgium	60.3	58.5	1.8	8.3	31.4	*100.0*
Sweden	71.7	47.6	24.1	17.2	11.1	*100.0*
Germany	79.2	77.2	1.9	16.0	4.8	*100.0*
Hungary	39.0	85.0	-46.0	30.1	30.9	*100.0*
Hungary 1996	45.0	39.1	5.9	32.8	22.2	*100.0*

* Other sources.

International comparison reinforces the usual hypothesis that firms in Hungary as a newly developing economy rely more on external sources than on internal accumulation of the firms. This finding is mainly relevant during the first years of the transition period. The 1996 data indicate a closing up on the financial structure of developed market economies.

The following matrix in Table 3 illustrates the distances between the pairs of countries. As a general rule, the financing structures are fairly similar, Austria is an exception.

[5] The time series of the individual countries do not refer to the same period. In the first step we constructed the longest possible time series of the different countries. Ordering these results according to the decline of the share of gross income finance in financing investments we got a very heterogeneous picture: Austria was the first with 96.9 and the United Kingdom was the last with 39.5 percent. In the case of long term debt Finland's share was more than 32 percent and Austria had less than 9 percent. The detailed comparison of the 'other sources' was not possible as issue of shares wasn't published as an individual item in each case.

Table 3

Matrix of pairwise distances

Country	France	United Kingdom	The Netherlands	Austria	Finland	Spain	Italy	Belgium	Sweden	Germany
France	0.000									
United Kingdom	0.087	0.000								
The Netherlands	0.042	0.157	0.000							
Austria	0.355	0.630	0.166	0.000						
Finland	0.013	0.166	0.048	0.306	0.000					
Spain	0.014	0.091	0.011	0.262	0.033	0.000				
Italy	0.021	0.139	0.004	0.208	0.024	0.005	0.000			
Belgium	0.046	0.049	0.038	0.331	0.094	0.018	0.039	0.000		
Sweden	0.035	0.185	0.005	0.167	0.027	0.016	0.003	0.062	0.000	
Germany	0.079	0.278	0.020	0.104	0.053	0.051	0.024	0.112	0.010	0.000

In order to assess the position of Hungary, we defined an average composition of financing for the market economies (Austria as an outlier was disregarded) and Hungary is compared to this average.

Distances between Hungary and the average of 9 countries: in the years of

1992: 0.267;
1993: 0.215;
1994: 0.031;
1995: 0.042;
1996: 0.036.

The time series for 1992–1996 indicates that during this period the financing structure of the Hungarian firms came closer to that of the average market economy.

4. Inter-sectoral comparison

In the case of inter-sectoral comparison first we present the net sources method and later the empirical findings of the analysis.

4.1. Net sources method

As already mentioned for inter-sectoral and inter-industrial comparison of Hungarian firms, the net sources method was considered appropriate. For the nearly 4000 large enterprises the specification of the database enabled us to compile fairly detailed ‘sources and use of funds’. The items in ‘sources and use of funds’ tables have been estimated as differences between the values in closing and opening balance sheets. The serial number in brackets identify the structure of the financial report to be submitted to the registration court as defined in the Hungarian act on accounting. The symbol Δ refers to the difference in closing and opening value. Depreciation has been taken from the income statement.

Uses	Sources
	11. Non-financial sources: net retained profit (Δ47)
	12. Non-financial sources: depreciation
	13. Non-financial sources: reserves and provisions (Δ44+Δ45+Δ46+Δ48)
1. Cash, short term deposits (Δ37+Δ29+Δ32)	*14*. Short term bank credits (Δ63+Δ64+Δ65+Δ66)
2. Long term deposits and loans granted (Δ17+Δ18)	*15*. Long term bank credits (Δ54+Δ55+Δ56+Δ59)
3. Direct investments (Δ15+Δ16)	*16*. Issued capital stock (Δ43-Δ30)
	17. Liabilities due to companies having majority interest in them (Δ58-Δ31)
	18. Bonds issued (Δ57)
4. Shares and securities for resale (Δ33)	
5. Receivable (Δ28-Δ61)	*19*. Payable (Δ62)
6. Accrued revenue (Δ40)	*20*. Accrued expenses (Δ67)
7. Tangible fixed assets (Δ08)	
8. Intangible fixed assets (Δ02)	
9. Stocks of inventory (Δ20)	
10. Depreciation	

The capital structure of physical investments is analysed in two aspects.

– The first view distinguishes between short and long term external sources. It analyses when the economy is getting stabilised, to what extent short term sources are being transformed to long ones in financing physical investments:

Gross income finance: 11+12+13
Long term external sources: 15+16+17+18-2-3
Short term external sources: 14+19+20-1-4-5-6

– The second view analyses the importance of credit institutions versus stock markets in financing investment:

Gross income finance: 11+12+13
Net financing through credit institutions, financial intermediaries: 14+15-1-2
Direct financing : 15+16+17-3-4
Other net sources:[6] 19+20-5-6

4.2. Results

In Table 4 we show the structure of investment financing for the total set of large enterprises.

It is obvious that during the mid nineties the structure of corporate investment financing changed profoundly. As newly privatised firms became profitable, the share of gross income finance increased. By this means the high costs and risks connected with external financing could be avoided. In 1996 nearly one half of all investments was al

[6] In the tables classified to direct sources.

ready financed from retained earnings. The rest was equally distributed between sources acquired via the financial intermediaries and via the direct capital market.

Table 4

The structure of investment financing
(percent)

Source	1992	1993	1994	1995	1996
	Intermediation or direct sources				
Gross income finance	24.2	41.6	52.5	50.4	48.6
Financing through intermediaton	24.6	1.9	30.7	32.7	27.5
Financing by direct sources	51.2	56.5	16.8	16.9	23.9
Investment in non-financial assets	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*
	Short or long term sources				
Gross income finance	24.2	41.6	52.5	50.4	48.6
Long term sources	67.4	62.3	28.9	37.4	44.5
Short term sources	8.4	-3.9	18.6	12.2	6.9
Investment in non-financial assets	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*

This tendency demonstrated in Table 5 is even more evident for the subset of FCIs (Fixed Capital Investors).

Table 5

Composition of net financial sources of fixed capital investors (FCIs)
(percent)

Source	1992	1993	1994	1995	1996	1997
	Intermediation or direct sources					
Gross income finance	29.5	45.7	46.4	38.4	63.0	77.3
Financing through intermediaton	27.6	15.0	37.6	36.4	45.5	32.2
Financing by direct sources	42.9	39.3	16.0	25.2	-8.5	-9.5
Investment in non-financial assets	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*
	Short or long term sources					
Gross income finance	29.5	45.7	46.4	38.4	63.0	77.3
Long term sources	58.0	59.0	30.7	46.1	19.9	30.0
Short term sources	12.5	-4.7	22.9	15.5	17.1	-7.3
Investment in non-financial assets	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*

The results demonstrate the changes in financing fixed real investments as a marked characeristic feature during the transition of the Hungarian economy. From year to year the share financed from retained earnings increased steadily, with the exception of 1995, when the temporarly introduced restrictive fiscal measures reduced the firms' profit level. As the economic expansion restarted in 1997, it was financed dominantly from retained income. Over three-quaters of all real investments was financed from internal sources. The rest is acquired as long term indirect sources. In some instances

short term external sources are substituted by long term ones, which reduce the risk of investment financing.

Enterprise classes and financing choices

In order to detect the factors influencing the availability of and/or the choice among various sources of investment financing, FCI enterprises have been classified in several subgroups. It was assumed that

– size,
– ownership,
– technology,
– profitability,
– and sales direction

may influence the composition of financial sources.

Our results indicate that some conventional assumptions – on factors influencing credit availability at micro level – do not work. Neither the size of firms (measured either by sales turnover or by the value of total assets) nor the size of the investment, or the technology have a marked impact on the composition of the use of fresh financial sources.

On the other hand, ownership and profitability proved to have significant influence on financial sources.

The quadratic distance measures in Table 6 demonstrate the distances among public and private firms are in general greater than that of among national and foreign enterprises.

Table 6

Quadratic distances
(percent)

Source	1992	1993	1994	1995	1996	1997
	Public-Foreign controlled firms					
Intermediation or direct sources	0.169	0.371	0.033	0.178	0.176	2.224
Short or long term	0.153	0.830	0.013	0.189	0.032	2.368
	National private - Foreign controlled firms					
Intermediation or direct sources	0.336	0.179	0.125	0.101	0.079	0.515
Short or long term	0.167	0.558	0.040	0.094	0.020	0.037
	National private – Public firms					
Intermediation or direct sources	0.881	0.956	0.033	0.460	0.041	2.391
Short or long term	0.586	0.270	0.010	0.493	0.099	1.862

The following tables (Tables 7–9) help to evaluate the impact of the ownership of the enterprises to the structure of their financial sources. The distribution of the number of the firms by the different variables of study can be found in the Appendix.

Table 7

Composition of FCIs' net financial sources by ownership – public firms

Source	1992	1993	1994	1995	1996	1997
	Intermediation or direct sources (percent)					
Gross income finance	53.8	64.7	43.0	11.8	51.1	-32.1
Financing through intermediaton	33.0	-14.2	42.8	43.0	38.2	49.9
Financing by direct sources	13.2	49.5	14.2	45.2	10.7	82.2
Investment in non-financial assets	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*
	Short or long term sources (percent)					
Gross income finance	53.8	64.7	43.0	11.8	51.1	-32.1
Long term sources	36.8	67.8	29.1	69.2	34.1	106.9
Short term sources	9.4	-32.5	27.9	19.0	14.8	25.2
Investment in non-financial assets	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*

Table 8

Composition of FCI's net financial sources by profitability – foreign controlled firms

Source	1992	1993	1994	1995	1996	1997
	Intermediation or direct sources (percent)					
Gross income finance	22.1	28.1	45.5	45.8	60.7	89.5
Financing through intermediaton	39.2	33.3	28.8	30.6	61.9	-5.6
Financing by direct sources	38.7	38.6	25.7	23.6	-22.6	16.1
Investment in non-financial assets	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*
	Short or long term sources (percent)					
Gross income finance	22.1	28.1	45.5	45.8	60.7	89.5
Long term sources	55.9	30.0	35.8	43.4	19.7	18.7
Short term sources	22.0	41.9	18.7	10.8	19.6	-8.2
Investment in non-financial assets	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*

Table 9

Composition of FCI's net financial sources by ownership – national private firms

Source	1992	1993	1994	1995	1996	1997
	Intermediation or direct sources (percent)					
Gross income finance	-3.3	22.5	47.4	60.2	64.1	77.1
Financing through intermediaton	17.3	65.6	52.8	42.1	40.5	50.2
Financing by direct sources	86.0	11.9	-0.2	-2.3	-4.6	-27.3
Investment in non-financial assets	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*
	Short or long term sources (percent)					
Gross income finance	-3.3	22.5	47.4	60.2	64.1	77.1
Long term sources	87.4	85.4	20.8	18.4	8.4	33.1
Short term sources	15.9	-7.9	31.8	21.4	27.5	-10.2
Investment in non-financial assets	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*

Ownership is the dominant factor concerning the composition of financing. Foreign owned firms (either new or purchased during privatisation) could generate huge retention. In addition to finance new investments a part of the income is used to repay past liabilities, and to switch external sources into internal ones. (Some empirical evidences indicate that the extremely high profitability of some foreign owned firms is due to the income transfers between subsidiaries. Profit tax ratios in Hungary are low which may stimulate record profit in the Hungarian subsidiary through accounting high export prices in intra firm deliveries (transfer prices). For expansive firms to finance new investments from income accounted through transfer pricing may be a rational option.

During the nineties the group of public enterprises have significantly reduced. In most cases only bad (unprofitable) firms remained unprivatised. To this group belong some public utilities, which generate losses because of low administrative prices (e.g. public transport). Their investments are financed from long term credits, guaranted usually by government. The following set of tables (Tables 10 and 11) reveals the effect of profitability to the structure of sources.

Table 10

Composition of FCI's net financial sources by profitability (firms with profit > 0)

Source	1992	1993	1994	1995	1996	1997
	Intermediation or direct sources (percent)					
Gross income finance	46.9	63.0	58.4	67.4	79.3	94.8
Financing through intermediaton	24.6	-0.1	26.6	24.7	39.9	32.6
Financing by direct sources	28.5	37.1	15.0	7.9	-19.2	-27.4
Investment in non-financial assets	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*
	Short or long term sources (percent)					
Gross income finance	46.9	63.0	58.4	67.4	79.3	94.8
Long term sources	46.4	66.6	27.6	28.0	9.2	15.3
Short term sources	6.7	-29.6	14.0	4.6	11.5	-10.1
Investment in non-financial assets	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*

Table 11

Composition of FCI's net financial sources by ownership (firms with profit < 0)

Source	1992	1993	1994	1995	1996	1997
	Intermediation or direct sources (percent)					
Gross income finance	2.9	1.0	21.1	-86.7	-9.9	-33.3
Financing through intermediaton	32.2	50.2	59.9	80.3	66.4	23.1
Financing by direct sources	64.9	48.8	19.0	106.4	43.5	110.2
Investment in non-financial assets	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*
	Short or long term sources (percent)					
Gross income finance	2.9	1.0	21.1	-86.7	-9.9	-33.3
Long term sources	76.3	44.1	37.0	126.5	68.3	128.1
Short term sources	20.8	55.9	41.9	60.2	41.6	5.2
Investment in non-financial assets	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*

Profitability is also a decisive factor as far as the composition of real investment financing is concerned. The relation is straightforward in the sense that profit generated in the past rendered the finance of new investments from cheap internal sources possible. Loss making firms, on the other hand, have no other choice but to acquire direct sources (either issuing shares traded on capital market or raising funds from the owners).

The existence of an informational asymmetry can also be detected. It means that lenders (banks or direct investors) cannot distinguish between good and poor risks, and sources are traded on similar conditions irrespective of the actual risks of repayment. The high price of external sources stimulates good companies to finance their investment of retained earnings. The best stratum of firms relies almost exclusively on retention (called: gross income finance), the second stratum on long term commercial credits. Only the least profitable stratum is forced to use short term and/or direct sources. Generally speaking, only companies with large internal sources can afford to invest. It implies, instead of expectations for the future return on investments, the availability of existing sources determine investment decisions.

Non-profitable enterprises are forced to use either short or long term external sources. Long term sources are more suitable to overcome long term structural problems. The results indicate that heavy loss-makers are financed by long term sources. It may be explained that this subgroup includes large state owned firms. Their reorganisations are financed mainly from credits with state guarantee. In the case of temporary loss makers, short term external sources have a dominant role.

Classification criteria which proved to be less important

As we have already seen, ownership and profitability are relevant variables in explaining the structure of the sources of investments. There exist in the same time some factors of less importance. Nevertheless, some results concerning these variables will be presented in this section. Table 12 shows results by technology or economic activity.

Table 12

Composition of FCIs net financial sources by branches

Branches	Gross income finance		Financing through intermediaton		Financing by direct sources	
	1992	1997	1992	1997	1992	1997
	Intermediation or direct sources (percent)					
Agriculture	-6.7	32.8	10.2	57.6	96.5	9.6
Mining	-29.0	108.0	19.8	-135.4	109.2	127.4
Manufacturing	37.8	104.3	21.7	6.4	40.5	-10.7
Electricity, water etc.	12.8	32.1	-2.8	84.4	90.0	-16.5
Construction	50.5	72.3	-5.8	49.2	55.3	-21.5
Trade	-23.3	13.3	14.0	25.8	109.3	60.9
Hotels, restaurants	57.3	491.1	-19.9	849.6	62.6	-1240.7
Transportation	50.6	43.5	21.0	59.2	28.4	-2.7

(Continued on the next page.)

(Continuation.)

Branches	Gross income finance		Financing through intermediaton		Financing by direct sources	
	1992	1997	1992	1997	1992	1997
	Short or long term sources (percent)					
Agriculture	-6.7	32.8	93.1	58.0	13.6	9.2
Mining	-29.0	108.0	107.6	127.0	21.4	-135.0
Manufacturing	37.8	104.3	55.9	22.1	6.3	-26.4
Electricity, water etc.	12.8	32.1	89.6	74.4	-2.4	-6.5
Construction	50.5	72.3	55.2	-13.6	-5.7	41.3
Trade	-23.3	13.3	102.9	122.3	20.4	-35.6
Hotels, restaurants	57.3	491.1	45.5	-773.9	-2.8	382.8
Transportation	50.6	43.5	39.3	7.4	10.1	49.1

Technology – as indicated by the industrial classification – is of less importance concerning the structure of financing. This finding may be surprising, because technology may influence the length of time until the capital is locked up. As risk grows with the time span, according to prior belief technology should have been significant.

Despite the significant – but occasional – differences within branches, the general tendencies are evident: financing by short term external sources were shifted to long term ones, the share of gross income finance is increasing.[7]

Next we try to group the enterprises by sales direction (exporters – domestic suppliers). This grouping can be seen in Tables 13 and 14.

Table 13

Composition of net financial sources by the share of exports – intermediation or direct sources (percent)

Source	1992	1993	1994	1995	1996	1997
	Firms over 50 percent exports					
Gross income finance	49.3	33.4	47.7	100.4	88.4	140.4
Financing through intermediaton	16.3	47.4	25.5	0.4	8.9	-11.6
Financing by direct sources	34.4	19.2	26.8	-0.8	2.7	-28.8
Investment in non-financial assets	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*
	Firms with 0-50 percent exports					
Gross income finance	47.5	51.4	42.9	23.3	61.2	66.8
Financing through intermediaton	12.1	-6.2	38.7	36.1	55.4	30.8
Financing by direct sources	40.4	54.8	18.4	40.6	-16.6	2.4
Investment in non-financial assets	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*
	Firms with no exports					
Gross income finance	3.7	40.7	51.5	48.0	55.0	63.3
Long term sources	48.1	36.2	38.7	54.2	42.1	55.6
Short term sources	48.2	23.1	9.8	-2.2	2.9	-18.9
Investment in non-financial assets	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*

[7] In certain industries the small number of firms could distort the results. Accumulated losses of the previous years are recorded as negative values in gross income finance.

Table 14

Composition of FCIs net financial sources by the share of exports – short or long term sources (percent)

Source	1992	1993	1994	1995	1996	1997
	Firms over 50 percent exports					
Gross income finance	49.3	33.4	47.7	100.4	88.4	140.4
Financing through intermediaton	34.0	36.6	29.5	11.8	20.2	15.8
Financing by direct sources	16.7	30.0	22.8	-12.2	-8.6	-56.2
Investment in non-financial assets	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*
	Firms with 0-50 percent exports					
Gross income finance	47.5	51.4	42.9	23.3	61.2	66.8
Financing through intermediaton	49.9	67.2	32.3	61.5	21.1	30.9
Financing by direct sources	2.6	-18.6	24.8	15.2	17.7	2.3
Investment in non-financial assets	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*
	Firms with no exports					
Gross income finance	3.7	40.7	51.5	48.0	55.0	63.3
Long term sources	74.2	52.7	28.6	22.5	17.5	34.8
Short term sources	22.1	6.6	19.9	29.5	27.5	1.9
Investment in non-financial assets	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*

In the late eighties, it was a commonplace to say that firms' performances were mostly assessed according to the location of output markets. Firms delivering to convertible export markets were considered stable with positive perspectives, whereas the performance of firms selling on the domestic market were treated much more cautiously. In 1992 this was still true as far as the access to long term sources are regarded. In 1997 this distinction could not be detected. Comparing exporters and domestic suppliers, there is no significant difference in the composition of investment financing. Only those firms are exceptions, which deliver the overwhelming majority of their output abroad. But these firms are mostly subsidiaries of multinational enterprise groups, and their financing decisions are taken at the headquarters.

As a last question, we analysed whether the *size* of investments had a significant impact on the structure of financing. In order to answer this question in 1997 the firms have been classified in groups according to the size of investments. For each pair of groups we defined the quadratic distance measure. Correlation coefficient has been estimated between the size of investments and the average distance of the groups. The value of the correlation coefficient is -0.21 (in the case of intermediation or direct sources) and -0.01 (in the case of short and long term sources). Based on these result we can state that the size of the investments has no effect on the composion of financing.

5. Conclusions

Our empirical investigations detect some new features in corporate financing used for fixed capital investments. It decribes how major sources of financing changed during the transition. In central planning, private savings were suppressed and the income generated

by firms were mainly centralised and reallocated through state banks. In the first half of the nineties capital inflows came mainly from foreign investors in the form of direct financing. Later on, as the newly establised large private firms, the majority of foreign controlled firms became profitable, the share of internal sources – referred to as gross income finance – increased. Since the second half of the ninties, the structure of real investment financing in Hungary has been very similar to that of the developed market economies.

As far as the composition of financial sources is concerned, a clear distinction may be drawn between enterprises that engage in fixed capital investments and those that do not. The former group is heavily dependent upon retentions. This is consistent with the idea that enterprises undertaking fixed capital investments intend to remain in business for some time.

The dominance of own resources implies that newly established enterprises without the support of solid capital owners are forced to rely on more expensive external sources. There is also evidence that bank borrowing is used mainly by companies that do not generate surplus internally. A clear order of sources is established: enterprises prefer to use firstly retentions, then bank credits and finally direct sources such as issue of equity.

The pattern of capital structure that an enterprise uses greatly depends on the type of ownership, by 1997 private foreign and national private enterprises were making much more use of retentions. Publicly owned firms rely more on debt financing, probably with government quarantee. There is no direct effect upon the preferred form of financing resulting from the size of enterprises.

APPENDIX

NUMBER OF FIRMS ACCORDING TO DIFFERENT BREAKDOWNS

1. Number of firms by ownership

Ownership	1992	1993	1994	1995	1996	1997
Public	168	95	74	52	49	40
Foreign	140	149	147	156	149	157
Private	565	353	435	519	540	565
Mixed	8	7	8	8	10	3
All	*881*	*604*	*664*	*735*	*748*	*765*

2. Number of firms by profitability

Profitability	1992	1993	1994	1995	1996	1997
Profit > 0	417	435	498	609	629	623
Profit = 0	75	54	50	20	32	33
Profit < 0	389	115	116	106	87	109
All	*881*	*604*	*664*	*735*	*748*	*765*

3. Number of firms by branches

Branches	1992	1997
Agriculture	300	204
Mining	7	3
Manufacturing	267	286
Electricity, water etc.	4	12
Construction	38	34
Trade	177	175
Hotels, restaurants	8	10
Transport	13	14
All	*814*	*738*

4. Number of firms by the share of exports

Share of exports	1992	1993	1994	1995	1996	1997
With over 50 percent exports	88	74	88	88	103	104
With 0-50 percent exports	243	196	194	206	214	200
With no exports	550	334	382	441	431	461
All	*881*	*604*	*664*	*735*	*748*	*765*

REFERENCES

ÁBEL, I. – ÖCSI, B. (1999): Finanszírozási szerkezet és tulajdonforma. *Közgazdasági Szemle*, Október pp. 888–904.

BALASSA, Á. (1966): A vállalkozói szektor hosszú távú finanszírozásának helyzete és fejlődési irányai. MNB Füzetek 7. Budapest.

BONIN, J. P. – SCHAFFER, M. (1995): Banks, firms, bad debts and bankruptcy in Hungary 1991–94. *Centre for Economic Performance.* Working Paper. **657.**

COBHAM, D. – SUBRAMANIAM, R. (1997): Corporate finance in developing countries: New evidence for India. Mimeo.

CORBETT, J. – JENKINSON, T. (1997): How is investment financed? A study of Germany, Japan, the United Kingdom and the United States. *The Manchester School,* Supplement, pp. 69–93.

CSERMELY, Á. (1996): A vállalkozások banki finanaszírozása Magyarországon, 1991–1994. MNB Füzetek **6.**

HELFERT, E. A. (1994): Techniques of financial analysis. *IRWIN*.

KERÉKGYÁRTÓ GY. – MUNDRUCZÓ GY. (1987): Statisztikai módszerek a gazdasági elemzésben. *Közgazdasági és Jogi Könyvkiadó.*

SCHAFFER, M. (1999): A note on the net financing sources and uses approach. Mimeo, March.

SZALAVETZ, A. (1998): On the reliability of hard indicators utilized to measure restructuring performance. Mimeo, ACE program P95-2019-R.

TÓTH, I. J. (1999): A legnagyobb feldolgozóipari cégek helyzete és kilátásai, 1998–1999. *Tárki*. Konjunktúra Kutatási Füzetek. **1**.

FINANCIAL accounts for Germany 1990 to 1996, *Deutsche Bundesbank*, Special Statistical Publication, **4.**