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DO MULTINATIONALS 'MISUSE' CORPORATE
INCOME-TAX HOLIDAYS?

An analysis based on Hungarian balance-sheet
figures



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SUMMARY

Multinational enterprises are often blamed for their non-transparent capital transactions. Since the background of such transactions is always left in dark, critical observers suspect that host economies may be at some disadvantage due to capital and income transfers. Obviously, investments that are carried out in emerging economies do produce sufficient levels of profit which can possibly be reduced through covert ways of income transfers. But, usually, even the open profit repatriation is also regarded as “unfriendly” step taken by multinationals. It is suffice to say that one of the basic market economic principles is the right of capital owners to spend their taxed earnings however they wish. There could be incentives to promote reinvesting of profits, but a strict regulation of profit repatriation would obviously limit the likelihood of undertaking foreign investments in that particular country.

The case of hidden profit transfers through transfer pricing may be a separate case. This means from the viewpoint of the host countries a punishable case of tax evasion, provided that it can be proved. However, in the case of most emerging economies tax evasion as rationale for transfer pricing and income transfers should not be taken very seriously, since most of these economies provide very generous corporate income tax holidays for foreign investors. The level of tax obligations and actual corporate income tax payments is very low. Hence, if there are income transfers via transfer pricing, even the direction of such manoeuvres is not so obvious. Why not to channel corporate incomes of international networks from countries with high profit rates to countries with tax holidays? Such an assumption would, however, provide additional argument for those observers of more developed countries who criticize FDI from the basis of transferring jobs to less developed regions, thus contributing to high unemployment in donor countries. FDI not only shifts employment, but may even reduce budget revenues due to income transfers to “tax heavens”.

This paper tries to go after this problem. A simple comparison of levels of value added in Germany and in Hungary should clear if there were such income transfers between the two countries. For in case taxable incomes that were generated in Germany were transferred through *e.g.* transfer pricing to enjoy tax holidays in Hungary, this would mean a higher, artificially inflated rate of value added in Hungary. The comparison of the two countries’ rate of value added could not prove this hypothesis. On the other hand, calculations showed that the bulk of the tax holidays was used by very few, very much concentrated manufacturing branches (basically a handful of large multinational companies). Another interesting result was that Hungarian rates of value added were most advantageous in sectors with relatively low foreign penetration and definitely little granted tax allowances.

INTRODUCTION^{*}

Hungary made serious efforts to fulfil its transition tasks in the 1990s and put the real economy on a firm market-economic basis. Legislative frames were created, freedom of enterprise guaranteed, trade capital flows liberalized, the state sector largely privatized, and state intervention through direct subsidies substantially reduced.

The state largely withdrew as an economic actor and this was expressed even in the tardy development of an industrial policy concept. Such policy and the use of state aid were targeted mainly at investment, especially foreign investment, the underlying idea being that investment decisions should enjoy general support and the task of picking the winners be left to the market and its entrepreneurs. State aid ‘materialized’ mainly in the form of tax holidays, not as direct money transfers. Since the conditions for these were rather strict (size thresholds, sectoral and employment preferences, *etc.*), most of the qualifiers were foreign investors, as has always been stressed by

the National Association of Industrialists (*e.g.* in IPOSZ 2001).

This ‘aid policy’ seemed to have been successful. Large amounts of investment poured into the country in the 1990s, contributing to a substantial rise in manufacturing competitiveness. But the indirect government aim of channelling investment into high-technology sectors was less successful. In some cases, sectoral preferences were met by investors in a statistical sense, but the activity pursued in Hungary was not at the desired high level. By the end of the 1990s, Hungary’s attractiveness to capital investors was waning under the activity structure enforced and new investments could be absorbed only in industries using a skilled labour force. The aid policy shifted to channelling investments into this direction.

Generous tax incentives were an important help in channelling investment into the country, whose importance as tools has been emphasized by several authors (Éltető 1998, Hunya 2000, Antalóczy and Sass 2003, and others). With corporate income tax (but not other types of tax), Hungary became a tax haven in the 1990s. This may have induced some multinationals to channel here not only investment, but also profits of worldwide operations, in a move to minimize global profit-tax payments. There is hardly any analytical evidence for this, which is why testing the hypothesis is one of the main aims of this paper. Although the rules of transfer pricing have been described and accepted

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in several multilateral agreements, there is some anecdotal evidence of international tax avoidance. If this evidence holds true, the ‘state aid’ of Hungarian governments may in some cases have been effective aid, actually paid by other countries, but realized in Hungary. This may also have been a reason behind the relatively high share of state aid in Hungarian GDP, which emerges from international statistics. Hungary’s accession to the EU in 2004 changed the picture substantially, however, as it altered the conditions for granting tax incentives for investment.

Table 2
State aid for business associations
(€ million)

	1996	1997	1998	1999	2000	2001
Total aid, of which:	577.7	765.0	836.8	689.0	800.1	800.5
* Manufacturing	336.1	509.3	523.2	375.9	479.2	442.1
* Transportation	220.9	223.5	290.3	291.3	304.1	276.5
* Coal mining	20.7	32.2	23.3	16.1	12.6	16.2
Total aid/GDP (%)	1.6	1.9	2.0	1.5	1.6	1.5
Per capita aid (€)	56.5	75.2	82.6	68.3	80.0	80.0
Aid per employee (€)	152.7	209.8	226.3	180.9	207.9	N/A
Aid/central budget expenditures (%)	3.28	3.80	4.01	3.26	3.44	N/A

Source: TVI 2002, p. 12.

Table 1
State aid for manufacturing firms by aid categories
(%)

	1996	1997	1998	1999	2000	2001
Non-refundable subsidy	34.28	25.05	22.33	12.46	18.36	26.29
Tax allowance	58.76	58.28	72.90	76.21	76.82	71.04
Interest subsidy	1.46	2.87	0.71	1.84	1.41	0
Equity share	0	0	0	0	0	0
Interest-free loan	2.86	4.60	3.60	7.58	2.01	0.39
Guarantee	2.64	9.20	0.46	1.90	1.41	2.28
Total	100	100	100	100	100	100

Source: TVI 2002, p. 20.

Tables 1 and 2 show the figures for state aid and highlight the importance of tax incentives for investment-attraction purposes, especially in manufacturing. The share of tax holidays in total manufacturing aid increased from below 60 per cent in 1995 to over 75 per cent in 2000. It then decreased somewhat as the government changed its investment-promotion policy and tightened some conditions for investment tax holidays, in preparation for joining the EU.

Rather than examining the government dilemma over how effectively tax holidays can support industrial and other policy

goals, this paper concentrates on the opposite side. It seeks to observe the impacts on multinational corporations of the tax allowances they obtain. It then discusses briefly the tax-policy issues entailed and introduces the idea of a performance-based tax policy. This approach addresses adequate level of taxes (especially corporate income tax) from the angle of ‘users of state services’. Even if governments really compete through tax levels (the main pillar of the ‘race-to-the-bottom’ argument), this is still only one side of the coin, the other being the level of state services. Competing governments and states provide a kind of package deal. Background infra-

structure, legal background, law enforcement, all kinds of regulations, *etc.* are government ‘services’, for which taxes are collected in compensation. According to this approach, tax policy and many other policies, institutions and state activities are special products treated on commercial basis. The intention in this paper is not to argue for or against that approach, but to point out that it may well be taken by companies when they make their spatial decisions.

This kind of argument leads easily to the conclusion that tax policy and the effective rate of corporate income tax make up an important business consideration. The financial performance of affiliates may depend on this to a large extent, and so may consolidated corporate financial performance in some cases. Tax policy may influence both spatial decisions and actual corporate financial manoeuvres. It is important to differentiate between these two levels, which are both influenced by tax policies, but at different times and in different ways. For the ‘race to the bottom’ discussion, the two impacts can be formulated as (i) tax incentives channelling investment (and so workplaces and potential generation of future income) from countries with higher tax levels to ones with lower tax levels, and (ii) tax measures inducing transfers of profits from one location to another, towards tax havens. The first issue may have a longer-term negative impact on high-tax countries, but the year-on changes in financial flows and profit generation may also be harmful, especially if accompanied by financial market

speculation. After a brief description of the tax-policy debate, the paper tests whether the second impact can be measured, using Hungarian and German corporate balance-sheet data for 1998–2001.

TAX POLICY AND INVESTMENT INCENTIVES: A ‘RACE TO THE BOTTOM’?

This section does not attempt a general overview of the subject of effective tax incentives. It highlights a specific interpretation of taxes as ‘compensation’ for special state services such as various state-run market economic institutions run by the state, state owned infrastructures utilized as ‘public goods’ and alike. In this interpretation, the state’s right to collect taxes does not come solely from its superimposed position above citizens and organizations. It is more a right of the state to have the users or ‘customers’ of state (public) goods pay for the services it provides for them.

In this market-oriented approach, the level of taxation depends on two factors: the extent to which the services are utilized and the quality of those services. The ‘price’ of the services also depends on the quality of the services provided. But if tax collection is viewed from the angle of competition for market transactions, it holds an essential place in the market system. This raises the question of tax allowances and the ‘race to the bottom’ dilemma. If states compete with

their ‘services’ and with the ‘price’ for them, i. e. with effective tax levels, then in an optimal situation, market equilibrium will be established. The argument described briefly here (after Schäfer 2004) runs that a market-compatible, competitive approach to tax systems also encourages a steady improvement in the ‘services’ and does not necessarily endanger the stability of the state budget. A greater danger is posed by the inefficient use of public money that results from the absence of competitive pressure on states.

Today’s typical tax systems define most taxes as obligatory monetary contributions enforced by the state without any direct compensation being provided for the taxpayers. This definition contradicts the basic economic principle of voluntary exchange of goods. Partners in this relationship are not equal partners in exchange. The relationship between state and taxpayer is governed by the power of the state. This situation also contradicts the principles of constitutional economics, where the state is defined as a voluntary association of individual citizens with the aim of achieving mutual gains. Voluntary authorization of the state by citizens to provide services for mutual benefit places the relationship between state and citizen on the same level as the relationship between citizens.

Compulsion can only be applied, however, if the citizens concerned are unable to avoid the compulsion. Increasing chances of doing so, under conditions of globalization, are provided by voluntary, equivalency-based relationships in the area

of another jurisdiction. Free movement of capital and individuals has increased worldwide but such freedom is also an underlying principle of the Europe agreements and strongly supported by the organizations of European integration. So today’s systemic competition is marked by competition from immobile elements of spatial locations for internationally mobile resources, to complement the two sets and so achieve mutual benefits. Elements of systemic competition are part of the general competition among spatial locations and influenced by the globalization process, which in this respect can be seen as a worldwide programme for increasing the exit options open to the private sector (Schäfer 2003).

The tax system lies at the core of international systemic competition. Traditionally, the view taken of the tax system is income-oriented: its task is to gather the resources required for the state budget (Blankart 2002). Revenue and expenditure are seen as separate. The state, as a sovereign, superimposed power, declares what state revenue is required and distributes the burdens among taxpayers through a differentiated tax system. This distribution follows neither the optimum principle (a trade-off between efficiency and fairness) nor the equality principle, which in a sense precludes the state from being dependent on particular legal obligations (Schäfer 2004). The opposite view focuses on the principle of equivalency known from constitutional economics to be at the heart of the exchange paradigm. The state receives the funds necessary to provide its services as compensa-

tion from those who use them. Thus taxpayers are burdened according to the volume of state services they have used. Taxes can be regarded as a ‘price’ for the state services rendered (Blankart 2002; Märkt 2003), with due consideration for the equivalency principle. Systemic competition forces the exchange paradigm on the tax system because traditional tax regimes lose efficiency through their lack of equivalency and the continual increase in the exit options from national tax regimes.

However, states too can try to escape the ‘inconvenient’ impacts of increased systemic competition. (i) One option is to plug exit opportunities for taxpayers. For example, states can curb or attach conditions to the free movement of capital. Such restrictions can obviously be harmful economically and they run counter to many international agreements, including the Treaty of Rome, which promote the free movement of capital. (ii) A second option is to limit the current tax autonomy of states and move responsibility for this to a higher level, *e.g.* to the EU level. There are strong moves in this direction in the EU and in the OECD. The extreme would be to shift the authority to levy taxes to a world level, which would eliminate taxpayers’ exit options altogether. But the process has also induced a kind of race to the top in the field of regulation. (iii) A third option is to ‘harmonize’ tax policies on a bilateral basis. This, in economic terms, would create international cartels of states intent on limiting tax competition. There have been several EU and OECD documents dealing

with the harms and dangers of tax competition. The practice most criticized is the provision of tax holidays for investments, especially preferential treatment of foreign over domestic investors (Krause-Junk 2002).

All three escape strategies by states are intended to curb competition among tax systems. But this would also end the beneficial effects of competition in this segment of the economy (Schäfer 2003). Furthermore, the escape strategies would launch and increase competition over regulation. The regulatory termination of tax competition would lose efficiency again when enforcement possibilities were limited at the borders of the cartelized states. Schäfer (2004) argues that the question in the ‘race to the bottom’ discussion is put the wrong way. If governments scold international corporations for avoiding state taxation by various means while still using state services, where does the real problem lie? Is the process of globalization guilty of endangering the efficiency of the traditional tax paradigm? Or has the income-based principle of the traditional tax system become decreasingly adequate because it becomes incompatible with expanding globalization? It is not the separate actions of individual players in the game, but rather the inflexible rules of the game, which contribute to perceived negative effects of globalization. So proponents of the equivalency principle suggest proper overhaul of tax regimes, instead of the regulatory spiral of unification and harmonization proposed by the

EU and OECD, which eliminates competitive elements from tax systems.

The following section looks at one potential negatively perceived side effect of tax competition. It does not address the problem of investment flows, simply the possibility of distorted income flows. Do multinational companies try to escape national taxation using exit (ii): channelling corporate profits to tax heavens? (Exit (i) is to channel investment and business to low-tax locations.)

COMPARING PROFITS IN GERMAN AND HUNGARIAN MANUFACTURING

This analysis aims to discover whether multinational manufacturers have used Hungary as a tax haven, channelling profits there in order to reduce tax obligations in other spatial locations. If so, this would mean that reported, taxed profits were higher than those actually earned in Hungary.

Let us assume an ideal case in which production conditions are internationally similar and profit rates more or less the same, so that the only factor distinguishing spatial locations is the effective rate of corporate tax.¹ This gives an incentive

¹ This may be a bold assumption, as many factors can create differences in international profit rates, linked mainly with level-of-development factor endowments and investment risks. When comparing Germany and Hungary, the latter's lower level of development would indicate higher profit margins, but also higher investment risks. These effects, with strong tax incentives for investment,

to channel as much profit to low tax locations as possible – within or maybe circumventing the restrictions of international treaties on transfer pricing. As a result, average profit rates in tax havens would go up. Parallel with this, the effective tax collected in high-tax countries would go down back, while realized tax revenues in tax havens would remain unchanged – assuming a 100 per cent tax holiday – and the consolidated taxation of the multinationals would decrease. Companies would have ‘saved’ on taxes. The statistics for state aid by Hungary show that large amounts in tax allowances were awarded in the second half of the 1990s. This ‘aid’ was never actually paid, as it consisted simply of potential tax revenue never collected. The suspicion is that at least some of this uncollected tax revenue was due for activities carried out elsewhere, not in Hungary, so that the tax relief was effectively granted by other countries, not Hungary. If that argument holds, there must have been higher profit rates in Hungary than in other countries.

To measure profit-rate differences calls for a benchmark country, and Germany was chosen. It was assumed that sectoral profit rates in Germany were typical of a large number of developed industrial economies, as there must theoretically be a levelling out of profit rates internationally. If similar profit-rate measures are calculated for Germany and Hungary, it becomes possible to measure the differ-

would suggest higher profit rates in Hungary than in Germany.

ences. But first it is necessary to examine the branches of Hungarian manufacturing for differences of profit rates, tax obligations and tax holidays, and for correlations of these with levels of foreign ownership. *Table 3* summarizes some important figures at NACE 3-digit level for Hungarian manufacturing industries. It was decided to go into this deeper sectoral breakdown because the ultimate object of comparison was the effective profit rate in the same industrial activities (to some extent and in some cases the same companies) in two different spatial locations.

Table 3 includes all accessible NACE 3-digit figures for manufacturing industries on total tax bills, effectively utilized tax holidays, net tax obligations and level of foreign ownership, in the sales revenue of those industries. First, the cumulative tax relief in 1998–2001 was examined. There is indeed some concentration: 67.1 per cent of all tax holidays were granted in seven industries (Column 3). Oil refining (230) got 7.1 per cent (HUF 20.5 billion), basic chemicals 5.5 per cent (HUF 15.9 billion), drugs (244) 8.3 per cent (HUF 24.1 billion), office machines and computers (300) 8.1 per cent (HUF 23.3 billion), lighting equipment (315) 6.3 per cent (HUF 18.4 billion), road vehicles (341) 12.8 per cent (HUF 37.1 billion), and automotive parts (343) 19 per cent (HUF 54.9 billion). All these industries except basic chemicals are dominated by foreign companies, with the lowest share of multinationals in total turnover of 90, 5 per cent, in the case of computers and lighting equipment. Moreover, all these

industries (except 343 automotive parts) are highly concentrated on a handful of large multinationals. An exception may be oil refining, where the largest player is MOL, an international player, but headquartered in Hungary, where its shares are publicly traded and the main owners are international financial investors, not other oil companies. There is close cross-ownership between MOL and the largest companies in basic chemicals.

It is also clear from the table that the industries with the highest tax holidays pay the least taxes. Column 5 contains figures for the relationship between total tax obligation and effective tax payment. Industries with the largest tax-holiday totals offset almost all their payment duties. So their total tax obligation was almost completely ‘saved’ by the corporate income-tax holidays received after their investments. With automotive parts (343), 19 per cent of the total tax obligation was paid, while road transport vehicles (341) paid in less than 2 per cent, lighting equipment (315) 9 per cent, and computers (300) 11.5 per cent. Only 18 industries managed to reduce the effective tax payment rate to less than 50 per cent. Of these, only 4 were not dominated by foreign owners, with a foreign ownership share of less than 50 per cent.

The last column is also interesting: foreign companies’ share in manufacturing sales revenues. The 45 industries where the share was over 50 per cent have been highlighted, but there were many others with 35–50 per cent penetration. Most of these would also have

Table 3
Tax obligation and holidays in Hungarian manufacturing

1998–2001	Net tax obligation (2)	Tax holidays (3)	Total tax obligation (4)	2/4	Level of foreign ownership. %*
151	5679138	2821608	8500746	0.668075	30.5
152	12768	1612	14380	0.8879	37.6
153	3637663	3483399	7121062	0.510832	42.5
154	1106233	1817599	2923832	0.37835	92.7
155	3740739	720806	4461545	0.83844	67.8
156	3994114	1846786	5840900	0.683818	10.8
157	4073597	1498492	5572089	0.731072	32.9
158	7057854	1537643	8595497	0.821111	53.4
159	6977426	4970898	11948324	0.583967	69.4
160	4355210	4487009	8842219	0.492547	91.4
171	1746021	292434	2038455	0.856541	56.1
172	308028	362240	670268	0.459559	43.3
173	227431	13096	240527	0.945553	66.5
174	1830493	690987	2521480	0.72596	60.3
175	1130523	215939	1346462	0.839625	49.8
176	170083	1253	171336	0.992687	30.9
177	270981	4054	275035	0.98526	28.0
181	223388	4732	228120	0.979257	22.0
182	5679149	3077574	8756723	0.648547	53.6
183	12293	13443	25736	0.477658	40.7
191	115246	22896	138142	0.834258	44.1
192	458499	182962	641461	0.714773	72.5
193	1673000	535797	2208797	0.757426	66.0
201	602835	175746	778581	0.774274	25.9
202	2134357	220335	2354692	0.906427	79.0
203	1506609	486348	1992957	0.755967	36.6
204	279214	12934	292148	0.955728	6.8
205	340771	13673	354444	0.961424	23.5
211	647340	2283032	2930372	0.220907	51.7
212	3259149	2867418	6126567	0.53197	61.3
221	8537272	15540	8552812	0.998183	42.9
222	6234898	1054793	7289691	0.855303	18.3
223	274733	42069	316802	0.867207	41.3
230	12171203	20491382	32662585	0.372634	100.0
241	7678334	15891942	23570276	0.325763	42.7
242	862375	24284	886659	0.972612	30.0
243	1782459	312124	2094583	0.850985	68.2
244	13945711	24126672	38072383	0.366295	96.9
245	1547295	1923980	3471275	0.445743	70.0
246	1171674	218298	1389972	0.842948	29.0
247	2953	41025	43978	0.067147	99.8
251	1653168	405374	2058542	0.803077	56.5
252	12206569	5452145	17658714	0.691249	43.9
261	1105999	4184299	5290298	0.209062	56.2
262	3708853	1187967	4896820	0.7574	64.4
263	48680	211	48891	0.995684	6.9
264	2167039	1714012	3881051	0.558364	65.7
265	4465028	469253	4934281	0.904899	89.2
266	4143111	498119	4641230	0.892675	37.2
267	53988	3358	57346	0.941443	2.7
268	978835	550002	1528837	0.640248	47.4
271	658827	475619	1134446	0.580748	22.4

1998– 2001	Net tax obligation (2)	Tax holidays (3)	Total tax obligation (4)	2/4	Level of foreign ownership. %*
272	187692	130182	317874	0.59046	39.4
273	233103	3268	236371	0.986174	20.2
274	2008049	1165311	3173360	0.632783	37.0
275	2123186	1294668	3417854	0.621204	64.8
281	5897506	717669	6615175	0.891512	22.2
282	989222	310356	1299578	0.761187	47.8
283	381060	42048	423108	0.900621	9.3
284	205772	1744795	1950567	0.105493	76.4
285	4048543	282451	4330994	0.934784	33.1
286	1604830	291100	1895930	0.846461	61.1
287	4166961	842151	5009112	0.831876	49.3
291	1649597	334649	1984246	0.831347	58.3
292	6937822	1375797	8313619	0.834513	40.3
293	828516	861969	1690485	0.490106	59.1
294	890998	259639	1150637	0.774352	68.3
295	4568008	300022	4868030	0.938369	22.1
296	69418	17	69435	0.999755	0.0
297	2491601	3960496	6452097	0.386169	80.5
300	3057190	23343014	26400204	0.115802	90.5
311	1256442	152099	1408541	0.892017	40.0
312	2196843	177391	2374234	0.925285	62.1
313	1055274	481356	1536630	0.686746	45.7
314	515823	176	515999	0.999659	3.2
315	1798002	18366625	20164627	0.089166	90.5
316	4936275	6667906	11604181	0.425388	90.4
321	4171219	2385643	6556862	0.636161	81.2
322	4761921	4507977	9269898	0.513697	78.5
323	2629688	7803647	10433335	0.252047	98.1
331	1809588	443868	2253456	0.803028	9.9
332	2216777	332048	2548825	0.869725	45.4
333	1374267	425939	1800206	0.763394	31.9
334	270669	17183	287852	0.940306	76.9
335	14309	4	14313	0.999721	
341	661060	37123759	37784819	0.017495	99.8
342	600805	1069470	1670275	0.359704	49.5
343	12865091	54875068	67740159	0.189918	99.7
351	66090	211	66301	0.996818	0.8
352	590786	46976	637762	0.926342	87.4
353	320232	60489	380721	0.84112	0.0
354	83997	2351	86348	0.972773	
355	87631	10943	98574	0.888987	8.5
361	2352613	418082	2770695	0.849106	91.4
362	73554	475	74029	0.993584	21.8
363	12608	82	12690	0.993538	0.0
364	474189	1318	475507	0.997228	57.9
365	179513	101676	281189	0.638407	76.9
366	846096	58903	904999	0.934914	71.4

* Share in total sales revenue of firms with over 50 per cent foreign ownership.

Source: CSO and own calculations

over 50 per cent foreign control if a looser definition of ownership were used and firms with over 30 per cent foreign ownership were included in the group of foreign firms. So the conclusion is that the vast majority of Hungarian manufacturing is dominated by foreign firms. What does this mean from the viewpoint of tax holidays? One interpretation could be that foreign investors poured into Hungary because of the general investment incentives, and this may be true to some extent. But because of the existing investment threshold level (which also prevented Hungarian investors from qualifying), only the largest firms in the most concentrated industries could really apply for the holidays. That is expressed in the very strong concentration of effective tax holidays shown by the figures. In fact, some Hungarian-dominated industries in the 'second tier' of tax-holiday recipients, with a subsidy level one magnitude lower than the largest six, still gained significant amounts. Many of even these 'second-tier' industries are foreign dominated and only a few have lower foreign participation. So it can be assumed that even in these, foreign investors were the main beneficiaries of the tax incentives.

The correlation between level of foreign ownership in NACE 3-digit manufacturing industries and relative importance of tax holidays enjoyed was confirmed by correlation and regression calculations. The measures 'tax holidays relative to total tax obligations' and 'level of foreign ownership' (percentage share of foreign capital in total subscribed capital) showed

strong correlation ($R^2 = 0.6$). The panel regression results appear in Annex 1. The t statistic shows a robust relationship significant at all levels.

At this point it was decided to narrow the sphere of industries observed to those receiving over HUF 1 billion in tax subsidies over the 1998–2001 period: the 34 industries exceeding this represented over 93 per cent of all tax holiday granted (*Table 4*). Highlighting has been made for industries with over 50 per cent foreign ownership and those receiving over HUF 5 billion in tax holiday. All but one high-subsidy industry were foreign controlled, the exception being basic chemicals (42.7 per cent foreign share of turnover). This branch can be added to the oil industry (230) as another exception, where the largest producer, in excess of 42.7 per cent foreign control, was MOL-owned TVK. All other major recipients were in foreign-controlled industries.

The figures in Table 4 lead to the conclusion that the hypothesis has at least not been questioned. The main recipients of tax holidays were foreign-dominated industries. The sectoral structure of subsidies is highly concentrated (which can also be regarded a sign of an efficient aid policy) and tax holidays have probably been highly concentrate on the activities of a handful of large multinational responsible for very high shares of output in those industries. If that is all so, it may rightly be asked whether this very strong concentration of tax subsidies is justified by the amount and size of these recipient companies' activity in Hungary,

Table 4
Selected financial indicators of major recipients
of corporate tax allowances in Hungarian manufacturing industry
(over HUF 1 billion over the period 1998–2001 at current prices)

	Net tax obligation (HUF mn)*	Granted tax allowance (HUF mn)	Total tax obligation (HUF mn)**	Effective tax as percentage of total tax obligations	Majority foreign firms in total sales revenue (%, 2000)
151 Meat processing	5679	2821	8500	66.8	30.5
153 Fruit/vegetable processing	3638	3483	7121	51.1	42.5
154 Vegetable oil	1106	1818	2923	37.8	92.7
156 Grain	3994	1847	5841	68.4	10.8
157 Animal feed	4074	1498	5572	73.1	32.9
158 Other food	7058	1538	8595	82.1	53.4
159 Beverages	6977	4971	11948	58.4	69.4
160 Tobacco	4355	4487	8842	49.3	91.4
182 Textile garments	5679	3078	8757	64.9	53.6
211 Paper and pulp	647	2283	2930	22.1	51.7
212 Paper products	3259	2867	6127	53.2	61.3
222 Printing	6235	1055	7290	85.5	18.3
230 Oil refinery and processing	12171	20491	32663	37.3	100.0
241 Basic chemicals	7678	15892	23570	32.6	42.7
244 Drugs	13946	24123	38072	36.6	96.9
245 Household chemicals	1547	1924	3471	44.6	70.0
252 Plastic products	12207	5452	17659	69.1	43.9
261 Glass	1106	4184	5290	20.1	56.2
262 Ceramics	3709	1188	4897	75.7	64.4
264 Bricks	2167	1714	3881	55.8	65.7
274 Non-ferrous metal	2008	1165	3173	63.3	37.0
275 Metal foundries	2123	1295	3418	62.1	64.8
284 Metal forming	206	1745	1951	10.5	76.4
292 Other gen. machinery	6938	1376	8314	83.5	40.3
297 Other household electrics	2492	3960	6452	38.6	80.5
300 Office m. computers	3057	23343	26400	11.6	90.5
315 Lighting equipment	1798	18367	20165	8.9	90.5
316 Other electrical mach.	4936	6668	11604	42.5	90.4
321 Electronic parts	4171	2386	6557	63.6	81.2
322 Industrial com. systems	4762	4508	9270	51.4	78.5
323 Consumer electronics	2630	7804	10433	25.2	98.1
341 Road vehicles	661	37124	37785	1.7	99.8
342 Automotive chassis	601	1069	1670	36.0	49.5
343 Automotive parts	12865	54875	67740	19.0	99.7

* Book values. ** Total tax obligation minus granted tax allowances.

Source: Own calculations based on CSO data.

or whether it has simply been inflated for tax-avoidance purposes.

To see if this was so, it was necessary to compare profits generated in Hungary with those in benchmark Germany. This

was possible only if actual profits could be related to some kind of cost or sales figure (investments, assets). Accounting procedures are harmonized in EU countries, but not uniform, and data availability sets serious barriers to selecting

adequate profit-rate indicators. Company balance-sheet data had to be extracted from tax-office records, or for Germany, from a statistical office publication (SBA 2002)

An attempt was made to widen the scope of the comparisons by testing profit rates at different levels of the accounts. Hypothetically, it would be good to compare profit-and-loss statements on trading-activity level (sales revenues minus direct costs), corporate level (sales and other incomes minus direct and indirect costs), gross corporate profit before tax, and the same after tax. What could be obtained in a more or less comparable form from the two data sources were Gross Production, Net Production Gross Value Added (*Brutto Wertschöpfung*) and Net Value Added (*Netto Wertschöpfung zu Faktorkosten*). Since the German publication used an analytical approach for grouping various costs, it was to some extent different from the accounting-focused Hungarian database. For example, depreciation was deducted in different phase, and indirect taxes and subventions were incorporated at different stages. To streamline and harmonize the possible measures, data was purchased to calculate some of the German measures. Finally, two profit-rate measures were calculated: gross and net value added, each divided by gross turnover. The difference between gross and net value added is by and large indirect taxes and subventions, as well as depreciation. An important difference from Hungarian statistics was that the two variables included wage costs, which are deducted from

sales revenue at the level of direct and indirect costs in standard Hungarian statistics. So wage costs were added to the Hungarian profit figures to obtain the value added data.

The calculations did not bring the expected results. Hungarian profit rates were not significantly higher than German ones, as they should have been to prove the hypothesis. On the contrary, German profit rates in most industries exceeded the Hungarian levels significantly. One possibility, therefore, is that German profit rates are indeed higher, but another is that various inconsistencies between the two databases prevented the creation of matching German and Hungarian measures, so that they tended to slew the results in favour of Germany. The non-weighted average profit rates were 32 per cent for gross and 28 per cent for net value added for Germany, and 27 and 23 per cent for Hungary.

The magnitude of the differences also draws attention to the fact that German wage costs are strikingly higher. As the measure includes wage costs, the two countries' measures might level off after they were deducted. The distortion of the measures would then mean only that German manufacturing had higher income-generating potential than Hungarian did. After the deduction of wage costs would the levels even up or would the expected higher share of value added in Hungary to compensate for capital and tax revenues be obtained after all? In that case, the option of deliberate profit transfers would still be open. Unfortu-

nately, adequate German data for wage costs was not obtained, so that it was not possible to calculate the reduced value added measure. The figures for the two profit-rate measures appear in *Table 5*, broken down to NACE 3-digit level in-

dustries, the ones that received most tax subsidies in Hungary.

Columns D1–H1 and D2–H2 of *Table 5* show the relationship between the pairs of profit-rate measures. The bold negative values indicate higher Hungarian figures,

Table 5
Levels of accumulated relative profits* in selected
manufacturing industries in Germany and Hungary, 1998–2001

	H1	H2	D1	D2	D1-H1	D2-H2	Majority foreign firms in total sales revenue (% , 2000)
151 Meat processing	0.15	0.10	0.20	0.18	0.04	0.08	30.5
153 Fruit/vegetable processing	0.22	0.14	0.17	0.17	-0.05	0.02	42.5
154 Vegetable oil	0.20	0.15	0.10	0.88	-0.10	-0.06	92.7
156 Grain	0.23	0.17	0.21	0.15	-0.03	-0.02	10.8
157 Animal feed	0.19	0.14	0.18	0.17	-0.01	0.03	32.9
158 Other food	0.29	0.19	0.30	0.26	0.01	0.07	53.4
159 Beverages	0.35	0.20	0.24	0.19	-0.11	-0.01	69.4
160 Tobacco	0.60	0.51	0.10	0.10	-0.50	-0.42	91.4
182 Textile garments	0.41	0.34	0.25	0.23	-0.16	-0.11	53.6
211 Paper and pulp	0.25	0.17	0.30	0.24	0.05	0.07	51.7
212 Paper products	0.28	0.19	0.31	0.27	0.04	0.08	61.3
222 Printing	0.31	0.21	0.44	0.38	0.13	0.17	18.3
230 Oil refinery and processing	0.26	0.18	0.09	0.07	-0.17	-0.11	100.0
241 Basic chemicals	0.27	0.18	0.28	0.23	0.01	0.05	42.7
244 Drugs	0.51	0.38	0.33	0.29	-0.18	-0.09	96.9
245 Household chemicals	0.32	0.19	0.26	0.23	-0.06	0.04	70.0
252 Plastic products	0.30	0.21	0.36	0.32	0.06	0.11	43.9
261 Glass	0.41	0.31	0.38	0.33	-0.03	0.01	56.2
262 Ceramics	0.52	0.44	0.42	0.38	-0.11	-0.06	64.4
264 Bricks	0.43	0.31	0.43	0.32	0.0	0.01	65.7
274 Non-ferrous metal	0.25	0.18	0.23	0.23	-0.01	0.05	37.0
275 Metal foundries	0.32	0.24	0.40	0.35	0.07	0.11	64.8
284 Metal forming	0.21	0.12	0.42	0.32	0.22	0.19	76.4
292 Other gen. machinery	0.34	0.26	0.37	0.35	0.03	0.09	40.3
297 Other household electrics	0.24	0.16	0.30	0.26	0.06	0.10	80.5
300 Office m. computers	0.19	0.09	0.25	0.34	0.06	0.24	90.5
315 Lighting equipment	0.36	0.27	0.44	0.40	0.08	0.13	90.5
316 Other electrical machinery	0.15	0.09	0.33	0.29	0.17	0.19	90.4
321 Electronic parts	0.31	0.20	0.27	0.21	-0.04	0.01	81.2
322 Industrial com. systems	0.23	0.17	0.22	0.19	-0.02	0.02	78.5
323 Consumer electronics	0.09	0.05	0.25	0.23	0.17	0.18	98.1
341 Road vehicles	0.18	0.13	0.20	0.17	0.02	0.04	99.8
342 Automotive chassis	0.25	0.20	0.29	0.26	0.04	0.05	49.5
343 Automotive parts	0.22	0.16	0.31	0.27	0.09	0.11	99.7

* Gross value added/gross turnover (1) and net value added/gross turnover (2).

Source: Own calculations based on data from CSO and SBA.

meaning there were very few industries in which Hungary showed higher profit rates. In most cases, German measures were much higher, often by over 10 percentage points. The outstanding measure for Hungary's tobacco industry is the re-

sult of the high excise tax not being deducted from sales. It is also obvious that the positive or negative deviations have hardly any correlation with the dominant ownership pattern of the industry.

Table 6
Deviations from average profit levels of selected industries in Hungary and Germany
(1999–2001 cumulative profit figures)

(1)	(2)	H1/H1'	H2/H2'	D1/D1'	D2/D2'	3-5	4-6	Majority for- eign firms in total sales revenue (%, 2000)
		(3)	(4)	(5)	(6)	(7)	(8)	
151	Meat processing	0.50	0.44	0.60	0.62	-0.10	-0.18	30.5
153	Fruit and vegetable processing	0.70	0.63	0.52	0.58	0.18	0.05	42.5
154	Vegetable oil	0.64	0.64	0.30	0.31	0.34	0.33	92.7
156	Grain	0.75	0.77	0.63	0.54	0.12	0.23	10.8
157	Animal feed	0.60	0.61	0.56	0.59	0.04	0.02	32.9
158	Other food	0.92	0.84	0.91	0.91	0.01	-0.07	53.4
159	Beverages	1.13	0.89	0.74	0.67	0.39	0.22	69.4
160	Tobacco	1.95	2.23	0.32	0.33	1.63	1.90	91.4
182	Textile garments	1.31	1.49	0.75	0.81	0.56	0.68	53.6
211	Paper and pulp	0.81	0.76	0.91	0.84	-0.10	-0.08	51.7
212	Paper products	0.89	0.83	0.96	0.94	-0.07	-0.09	61.3
222	Printing	1.00	0.92	1.33	1.34	-0.33	-0.42	18.3
230	Oil refinery and processing	0.84	0.79	0.27	0.23	0.57	0.56	100.0
241	Basic chemicals	0.86	0.81	0.86	0.81	0.0	0.0	42.7
244	Drugs	1.64	1.67	1.00	1.01	0.64	0.66	96.9
245	Household chemicals	1.05	0.83	0.81	0.82	0.24	0.01	70.0
252	Plastic products	0.96	0.91	1.10	1.11	-0.14	-0.20	43.9
261	Glass	1.32	1.38	1.16	1.15	0.16	0.23	56.2
262	Ceramics	1.69	1.92	1.28	1.32	0.41	0.60	64.4
264	Bricks	1.37	1.37	1.31	1.12	0.06	0.25	65.7
274	Non-ferrous metal	0.79	0.80	0.71	0.80	0.08	0.0	37.0
275	Metal foundries	1.04	1.07	1.21	1.24	-0.17	-0.17	64.8
284	Metal forming	0.67	0.55	1.28	1.12	-0.61	-0.57	76.4
292	Other gen. machinery	1.09	1.15	1.13	1.22	-0.04	-0.07	40.3
297	Other household elect	0.77	0.72	0.90	0.93	-0.13	-0.21	80.5
300	Office m. computers	0.60	0.42	0.76	1.18	-0.16	-0.76	90.5
315	Lighting equipment	1.16	1.20	1.34	1.42	-0.18	-0.22	90.5
316	Other electrical machinery	0.49	0.41	0.99	1.01	-0.50	-0.60	90.4
321	Electronic parts	1.01	0.89	0.82	0.74	0.19	0.15	81.2
322	Industrial communications systems	0.76	0.76	0.66	0.67	0.10	0.09	78.5
323	Consumer electronics	0.28	0.24	0.77	0.81	-0.49	-0.57	98.1
341	Road vehicles	0.58	0.58	0.62	0.59	-0.04	-0.01	99.8
342	Automotive chassis	0.80	0.89	0.88	0.90	-0.08	-0.01	49.5
343	Automotive parts	0.70	0.72	0.95	0.95	-0.25	-0.23	99.7

Source: Own calculations based on data from CSO and SBA.

In a last attempt to prove the hypothesis, deviations from average profit rates in manufacturing were calculated. For if there were a problem with differing content of measures, as seemed to be the case, this could be overcome only by adjusting the figures. Instead of comparing the two countries' (properly or poorly calculated) profit-rate figures, it was also possible to compare deviation in each branch from the country's manufacturing average. National differences were considered when introducing the averages and examining such deviation. The hypothesis would then indicate that in Hungarian industries where most tax holidays were granted to foreign firms, the profit rate deviated from the average in a positive direction and at higher magnitude than it did in Germany. Columns 3 and 4 of *Table 6* show branch deviation from total average manufacturing in Hungary and Columns 5 and 6 the same data for Germany. Figures over 1 indicate above-average profit rates.

Not surprisingly, the greatest deviation in Hungary's case is with the tobacco industry, because of the excise-tax problem, but beverages come in the same category. The other industries that made above-average profits were rather mixed: textile garments, drugs, household chemicals, glassware products, ceramic products, bricks, metal foundries, general machinery, lighting equipments, and electronic parts. Yet of the six industries receiving the highest amounts of subsidy, only two (drugs and lighting equipments) proved to have above-average profit rates.

Nevertheless, difference from the national average is not the only factor that matters in an international comparison. Much more important is the relationship between the two countries' matching pairs of indicators. For there may be rational reasons for investing in low-profit Hungarian industries if the rate is even lower than in Germany. Furthermore, the important point for profit potential will be an upward trend in Hungarian profit rates. In other words, an industry with below-average profit rates may have promising potential profit transfers if the profit rate of the branch in Hungary is closer to its manufacturing average than the German figure is. Where there are above-average profit rates, the Hungarian figures must exceed the Hungarian manufacturing average to a greater extent than is the case with the German figures.

Columns 7 and 8 of *Table 6* show the results of such a comparison. Bold figures show industries where German industries proved to have more advantageous positions. Of the six industries that received the highest level of nominal corporate income-tax subsidy, automotive parts, road vehicles, lighting equipment, and office machinery with computers had more advantageous profit-rate positions in Germany than in Hungary. Only drugs and oil refinery showed advantages in Hungary, and it has been seen that the oil industry is a special case anyway. So the original hypothesis was confirmed only for drugs, but even there the relationship was identified only by secondary tools of analysis.

It is interesting to see, however, which industries proved to have a relative profitability advantage, in Germany and in Hungary. Electronics and automotive, the two most internationalized industries, proved to have a profitability advantage in Germany rather than Hungary. The same applies to some resource-based industries, like the metal industry and paper and pulp. Hungary, on the other hand, seems to enjoy a profitability advantage in the food industry, the chemical industry and construction materials (all low-tech industries), and in some sections of the electronics industry. These results are in line with the traditional specialization patterns and the development levels of the two countries.

SUMMARIZING CONCLUSIONS

This paper has sought to check whether tax incentives provided by the Hungarian state have induced measurable profit transfers by multinational companies from spatial locations other than Hungary. The existence of such transfers may be very relevant to a discussion of tax policy and the ‘race to the bottom’ argument, as it would indicate that ‘unfair’ tax measures not only divert multinational investment from developed countries, but generate measurable profit transfers for tax-avoidance purposes, from these countries to low-tax locations and tax havens. This may be the case even though some

profit-transfer measures (e.g. transfer pricing) are internationally regulated.

Analysis of the profit rates of Hungarian manufacturing industries seemed especially relevant, as tax holidays in this country have been strongly concentrated on a few industries and companies. So the ‘temptation’ to channel corporate income to Hungary seemed rather high and large numbers of profit figures appeared to be unrealistically high. (The tax holidays received did not seem to justify these industries’ financial performance figures.) The paper compared the gross and net value added of Hungarian and German NACE 3-digit level industries, to see if the profit rates of industries receiving the biggest tax holidays showed a clear profit-rate advantage for Hungary (a sign of artificially inflated profits).

The analysis did not reveal evidence for the hypothesis. The general level of profits was higher in Germany than in Hungary, and the relatively more profitable industries in Hungary were far from identical with the ones that received the biggest tax subsidies. Based on these results, although rather limited analytical tools were used, the original hypothesis can be rejected. No proof was found that multinational companies’ were misusing certain countries’ tax incentives for the purpose of tax avoidance. The question may be reopened, however, if comparable data becomes available for calculating identical and comparable measures of profit rates. The picture could alter especially if wage costs could be filtered out of profit measures. In the tax-policy dis-

cussion, the survey did not draw any conclusions about the efficiency or impacts of tax incentives for investment, which is the prime objective of the ‘race to the bottom’ argument.

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ANNEX: SUMMARY OUTPUT

Regression Statistics

Multiple R	0,60963086
R Square	0,371649785
Adjusted R Square	0,365171948
Standard Error	0,206525425
Observations	99

ANOVA	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	2,447095402	2,447095402	57,37251031	2,12825E-11
Residual	97	4,137316855	0,042652751		
Total	98	6,584412257			

	Intercept	X Variable 1
Coefficients	0,011488	0,556273
Standard Error	0,041715	0,073441
t Stat	0,275391	7,574464
P-value	0,783601	2,13E-11
Lower 95%	-0,07131	0,410513
Upper 95%	0,094281	0,702032
Lower 95.0%	-0,07131	0,410513
Upper 95.0%	0,094281	0,702032

Relationship Between Foreign Ownership and Tax Holidays
(Excludes Tax Holidays in Road Vehicle Sector)

