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## **Hungarian car parts industry at a cross-roads: Fordism versus lean production**

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# HUNGARIAN CAR PARTS INDUSTRY AT A CROSS-ROADS

Fordism versus Lean Production

*Attila Havas*

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## 1 INTRODUCTION

Auto parts industry used to be somewhat neglected by analysts and policy-makers. In the 1980s, however, automotive component sector has emerged as an important industry in its own right due to momentous changes in technology, organisation and trade. The role of component suppliers has significantly increased not only in production but in design as well; their technical and economic performance has become a key factor in the fatal competition fought by major car manufacturers. Thus it is crucial to analyse this industry both from theoretical and practical, that is, industrial policy, point of view.

It is particularly so in Hungary for a number of reasons. First, the performance of this sector can be regarded as a sort of proxy variable to gauge the success of transition to market economy. Hungarian car parts suppliers have lost their former principal market with the collapse of CMEA but just then major foreign investors have entered the Hungarian market; Suzuki and GM Opel have opened car assembly plants, the latter one an engine assembly plant, too; while Ford and Audi have invested in an electrical component factory and an engine plant, respectively. Thus the new market opportunities are there for the Hungarian companies – in fact no planning office on earth could have ever planned such a timely structural change –; it is now their task to seize this chance for re-structuring and survival.

A second important, and closely related, question is the speed and extent of the diffusion of a new production paradigm, namely, lean production, and of new products, processes, management and organisational culture and techniques, e.g. just-in-time, total quality control, as required by the aforementioned foreign investors and other companies active as buyers. Will an archipelago of relatively advanced suppliers emerge, with these new developments being locked into an enclave, or can these new products, processes and management techniques diffuse in a wider circle through second and third tier suppliers? Can Hungarian companies also become competitive in other markets, given that they are able to meet the exacting demand of Audi, Ford, Opel Hungary and Magyar Suzuki?

Third, more generally, can this ‘on-the-job training’ accelerate the badly needed market re-orientation and transition? What is, and, should be, the role of the Hungarian government to facilitate this process?

This article cannot provide exhaustive, comprehensive and ‘final’ answers to these questions for two basic reasons. First, for the plain fact that no statistics are readily available as auto parts sector is not treated as an independent industry by the Central Statistical Office.<sup>1</sup> Moreover, some large companies involved in auto parts production are diversified ones with a really wide range of rather different products, and hence individual data collection would be required to compile reliable statistics. Therefore the performance of the sector as whole – in terms of shifts in the structure of foreign trade, profitability, productivity, etc. – cannot be analysed in a methodologically satisfactory manner.

Second, the above questions would also require a vast number of interviews. It is needless to stress that the interview method is a rather costly one, and thus resources allocated for this research have not allowed to provide complete, detailed answers for all the above questions.

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<sup>1</sup> One should not be surprised, indeed. Until fairly recently, this sector has been ‘a dark continent’ even in the UK, although the British automotive industry has been much more significant than the Hungarian one:

“In the mid 1980s, the automotive components industry was a dark continent: very little was really known about the number of suppliers, the size of the sector in turnover or employment, etc. This situation has since been improved by the publication of several research projects, consultants’ reports and DTI initiatives. There is now a recognition of the importance of taking a broad view - including component suppliers in the industry context - but there is still a need for better information and intelligence.” (DTI and SMMT [1994], p. 6)

Still, I strongly believe that it has been worthwhile raising these questions, partly because they put this article into a broader context, and partly because they provide some guidance for further research.

Given these constraints, the modest aim of this article, based on an extensive literature survey and interviews with managers, is not more than to shed some light on the on-going restructuring process in the Hungarian car parts industry. To circumvent the aforementioned constraints, a carefully selected series of interviews has been designed with ‘qualitatively’ representative firms, in an attempt to capture differences in ownership, size, portfolio of activities (i.e. specialised in automotive parts vs. diversified), markets and technologies. No doubt, this method does not meet the rigorous standards of statistical representation. Yet, it is hoped that the most significant issues can be addressed in this way, and hence informed guesses can also be formed about the most likely developments in the near future.

## **2 EVOLUTION OF CAR AND CAR PARTS INDUSTRIES**

Car manufacturing is often regarded as the ‘industry of industries’. It does not seem to be an overstatement if one considers its implications for other industries (substantial demand for other industries, such as metal, glass, rubber, chemical, petro-chemical, electric, electronics, textile and leather industries, as well as road construction with all the additional infrastructure requirements; and radically new opportunities in transportation), impacts on work organisation (mass production has diffused in other industries as well since it has been developed by Ford in the 1920s and nowadays lean production is also gaining importance in other sectors), on employment, vocational training, consumption and life style. It is not surprising, therefore, that this industry has bearings on international politics, too (see, e.g. the on-going trade battle among Japan, the US and the EU). Moreover, given the ever-increasing pollution, it also becomes an issue in domestic politics.

### **2.1 Technological changes and production paradigms**

No technological breakthrough has occurred in automotive industry since the development of the internal combustion engine. Thousands of incremental technological innovations, however, have substantially improved basically all features of cars (speed, fuel consumption, comfort, safety, appearance, etc.), while significant organisational innovations have completely reshaped the industry itself. Three major production systems, namely *craft*, *Fordist mass* and *lean production paradigms*, can be identified, each of them with rather distinct characteristics as far as the role of component suppliers is concerned.

These different production paradigms had significant impacts on design of cars, organisation of production and marketing, and hence the performance of the industry. In other words, any shift from one production system to another one has meant significant changes in the division of labour as well as in the distribution of profits between parts suppliers and car assemblers.<sup>2</sup>

### **2.2 The technical and economic importance of auto parts industry**

While information on automotive component sector used to be subsumed under the motor vehicle industry, it became a new ‘entry’ in international statistics in the 1980s due to its economic significance. A simple reason is that on average 10000–12000 parts are built into a

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<sup>2</sup> For more detailed analyses see Bongardt [1992], Clark *et al.* [1987], Helper [1991], Helper and Sako [1995], Lamming [1993] and Womack *et al.* [1991].

car accounting for some 50–70% of the manufacturing cost of an automobile. Other factors, however, seem to be even more important in explaining the economic significance of auto parts sector. One is the increasing trend in the trade of parts and components for several reasons, the other one is the importance of technological improvement, due to the extremely fierce competition, and the new role of suppliers in it. (OECD [1992])

*A) Increasing trade in parts and components, since*

- there is hardly any vertical integration in lean firms, and the growing pressure from lean competitors has led to a decreasing vertical integration in ‘Fordist’ firms (increasing outsourcing);
- competition and changing demand patterns require to locate production close to actual markets, and hence parts, subassemblies and kits have emerged as substitutes for fully assembled vehicles;
- technological changes, in particular the increasing use of ‘platforms’, have reduced the minimum efficient scale of assembly plants (i.e. decisive factors of scale economies have changed), and smaller assembly plants can be supplied with parts from outside sources.

*B) Importance of technological improvement of suppliers*

- lean production requires from suppliers the introduction of just-in-time delivery, total quality control, low-cost production, and, in most cases, increased responsibility for product development, i.e. substantially improved and different technological capabilities compared to the requirements of the Fordist mass production;
- product technology is deemed to be the future competitive ‘battlefield’ by industry analysts, and suppliers are supposed to play a significant role in this battle. Car manufacturing is one of the most competitive industry nowadays basically for two reasons. Lean producers apply a tremendous pressure on established mass producers offering cheaper cars of better quality, wider choice of model variations, more frequent model changes, faster delivery, etc. This development coupled with slow (or hardly any) growth in demand has resulted in a really severe competition. As no further possibilities for organisational breakthrough to reduce costs and/or increase efficiency can be envisaged since lean production is already introduced, product development is of vital importance to improve safety, fuel economy and comfort, and to develop ‘intelligent cars’, etc. Due to again the introduction of lean production, component suppliers have an increasing responsibility in product development.

The following sections address the question how Hungarian car parts suppliers can adjust to these shifts in production systems and international settings. First their history is summarised briefly since inherited norms, attitudes as well as accumulated knowledge and skills are certainly influencing this adjustment process.

### **3 TRADITIONS OF THE HUNGARIAN CAR AND CAR PARTS INDUSTRIES<sup>3</sup>**

#### **3.1 Craft production before 1945**

Cars, first assembled from imported parts, had been produced in Hungary since 1903. 1905 saw the first car designed and built by a Hungarian engineer, János Csonka. All the major car parts, such as engines, gears, chassis, had also been produced in Hungary until the mid-

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<sup>3</sup> For a more detailed analysis see Havas [1995b].

1940s, i.e. firms engaged in car manufacturing had not been mere ‘semi-knocked down’ plants of major foreign companies.

However, as only a few dozens of cars were turned out a year by two–three companies, most cars sold in Hungary were imported from Germany, Italy, the US and France (in descending order).

### 3.2 Heritage of the CMEA

Automotive production facilities were ruined during the war. Once they were restored, manufacturing of motorcycles, buses, lorries and other commercial vehicles started again. Car production, however, was abandoned given the new industrial policy. This policy first was influenced somewhat informally by Soviet advisors working in Hungary and then by a formal Soviet-Hungarian specialisation agreement signed in 1964. The overall goal of this accord was to co-ordinate the two countries’ industrial development projects – in the wider context of CMEA – in a number of industries, including automotive manufacturing. As in the case of all preferred sectors, a specific government programme was elaborated to promote vehicle production, too. Among other targets it stipulated to increase significantly the bus production capacity in Hungary to serve the whole CMEA area. As a result of this huge investment project, one the largest European bus manufacturing firm was established in the 1960s, turning out some 14,000 units a year in the 1980s.<sup>4</sup>

Hence lack of car manufacturing since the late 1940s did not mean the waste of considerable assets and skills accumulated in auto parts sector. Another opportunity for, or to be more accurate, another mandatory duty of, Hungarian suppliers was to ship car parts to other CMEA countries since the 1960s.<sup>5</sup> In most cases it was an advantageous business for them given the large production runs and relatively low-level technical and quality requirements. Moreover, they also enjoyed a favourable bargaining position vis-à-vis the Hungarian authorities responsible for resource allocation given particular political and economic factors. First, cars used to be regarded as important goods to make people satisfied in Hungary, where ‘socialism’ became much more ‘relaxed’ or ‘liberal’ than in other CMEA countries. Second, a severe shortage of cars prevailed: buyers had to wait for 3–5 years, or even longer for the most popular models, since almost all cars sold in Hungary were imported from the CMEA countries in this period. As these ‘politically precious’ goods were exchanged for auto parts, these companies benefited from this peculiar situation, indeed: it was relatively easy for them to acquire otherwise scarce resources, such as investment and wage funds.

Certain car parts, e.g. bulbs, batteries and dash boards, were also exported for hard currencies (to Western Europe, the US and India).<sup>6</sup> This reinforced the favourable bargaining position of these companies since another priority of the government’s economic policy was to increase hard currency exports revenues because of the mounting foreign debt. Other

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<sup>4</sup> Production was still 12,350 and 11,980 units in 1988 and 1989, respectively. The collapse of CMEA caused a dramatic drop in the last five years: output fell to 7,994 buses in 1990, and then every year saw a further decline. Thus output was a mere 1,576 units in 1994. (National Bank of Hungary, Monthly Report, 3/1995)

<sup>5</sup> The single most important buyer was the (former) Soviet VAZ (Lada) factory. Other significant customers included the Polish FSO and FSM (Polski Fiat) companies as well as Dacia in Romania. Although (the former) Yugoslavia has never joined the CMEA, Hungarian parts were also shipped to her car producer, Zastava (now in Serbia) until the recent UN embargo. Primarily ignition timers and switches, windscreen-wiper sets, horns, dash boards, door locks, car keys, boot-lock cylinders and batteries have been exported. Given the lack of sectoral statistics, aggregate CMEA-sales data are not available.

<sup>6</sup> Once again, the lack of sectoral statistics prevents one from presenting data on these export activities.

companies, producing and exporting parts only for commercial vehicles, e.g. engines, axles, undercarriages and tyres, also rode on these policy measures aimed at promoting exports accounted in hard currencies.

Given the characteristics of CMEA, again, severe shortage occurred in the aftermarket of car parts as well. Thus some firms, in particular small and medium-sized private or semi-private ones, started to produce lacking, but from a manufacturing point of view relatively simple, spare parts for Soviet, Polish and Romanian made cars running in Hungary.

#### **4 DEVELOPMENTS IN THE TRANSITION PERIOD**

Quite dramatic changes have occurred in the transition period, influencing rather forcefully all elements of the wider techno-economic environment of car parts manufacturing. Some of these moves have directly been caused by the transition process itself, some others have been decided earlier. In the following subsections these shifts are discussed briefly.

##### **4.1 Liberalised imports**

To begin with the most general development, roughly 90% of total imports has been liberalised since 1989, i.e. before the 1990 general elections which marked the political changes. The overall aim of this measure, taken by the last 'socialist' government, was to introduce import competition as an important step towards market economy, and provide easier access to raw materials and components to improve the international competitiveness of Hungarian companies. As for cars, unlike in other markets, the major concern was to eliminate the severe shortage prevailing for decades. Thus obstacles to private imports of cars were removed in September 1989, including the liberalisation of private foreign-currency bank accounts.<sup>7</sup> The former monopoly of a state-owned foreign trade company importing cars and that of the only distributor of cars was broken 1990 as dozens of private companies started to sell both new and second-hand cars. There are no queues at all, on the contrary, now the dealers are the ones who are waiting for buyers. As they are competing for clients, a number of favourable loan and leasing schemes are also offered.

As for car parts manufacturing, thanks to liberalised imports these companies are not at the mercy of their domestic suppliers any more. Now they can easily turn to foreign competitors for cheaper and/or better raw materials or intermediary products or timely, more reliable shipment.<sup>8</sup>

Import liberalisation has another direct impact on Hungarian car parts manufacturing. Soviet cars (Ladas) have always been imported in exchange for Hungarian car parts. Until the late 1980s buyers were waiting for these cars for years, and thus Hungarian politicians were begging for them when negotiating annual plans with their Soviet counterparts. The effective constraints in that period were the capacity of the Lada factory and the Hungarian capability to supply parts. The situation has completely changed since then: now the Hungarian capability to sell these parts is constrained by Lada sales in Hungary as demand

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<sup>7</sup> Later on various restrictive measures, such as 25% VAT, increased import tariffs, import quota, technical and environmental test for cars over 6 years, etc., have been introduced again in several steps so as to curb the outflow of foreign exchange and the influx of 'moving wrecks'. A detailed account of these measures and comments are provided in Somai [1993]. pp. 4-7.

<sup>8</sup> Quite often they find better services abroad, e.g. a company producing spark plugs does import metal parts from Italy because its cheaper than to buy those parts in Hungary.



has dropped significantly – by around two thirds – for two reasons.<sup>9</sup> First, previously cheap CMEA cars became rather expensive in 1990–91 because of higher taxes and the introduction of dollar accounting in CMEA trade.<sup>10</sup> Second, with liberalised imports, quite a few buyers have opted for second-hand, but more up-to-date, Western or Japanese makes instead of ‘the good old’ Lada.<sup>11</sup> Hence Hungarian companies supplying Lada parts have lost a significant chunk of their former sales.<sup>12</sup> Not surprisingly it has caused severe financial difficulties, even near-bankruptcy situations in quite a few cases.<sup>13</sup>

## 4.2 Re-structuring in other CMEA countries

### 4.2.1 Intense competition

Generally speaking, competition has become genuine in the former CMEA countries, too, as the once intra-CMEA trade has been conducted in hard currencies since 1990, and imports have also been liberalised. Insolvency of CIS countries poses another major hurdle to Hungarian exports to these, once the single most important, markets.

Hungarian automotive parts manufacturers, too, previously enjoying monopoly, or quasi-monopoly in these markets, now have to face competitors both from advanced and newly industrialising countries as well as the financial difficulties of their former buyers. It clearly hinders the export of automotive parts, such as tyres, bulbs as well as the export of capital goods used in the CIS automobile industry, e.g. painting robots. Indirect exports have also been effected by these factors. The most obvious example is the case of bus manufacturing. As already mentioned Hungarian bus production has dropped by almost 87% because of the shrinking exports to the CIS countries. Thus bus parts suppliers’ sales have also diminished.

### 4.2.2 Privatisation of the Central and Eastern European automotive industry

Clearly, strategic moves of major Western car and car parts producers in Central and Eastern European countries also have crucial bearings on Hungarian suppliers’ business opportunities. Thus it is worth mentioning some recent developments.<sup>14</sup>

The major Czech and Polish car factories have already been privatised: Skoda by Volkswagen, Fabryka Samochodow Malolitrazowych (FSM) by Fiat, while General Motors formed a joint venture, GM Poland, with Fabryka Samochodow Osobowych (FSO), basically

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<sup>9</sup> New car sales have fell to a similar extent in 1991-92, and thus Lada was still the leading make in new car sales with its 23% market share in 1992. However, as sales recovered in 1993-94, partly because Opel and Suzuki commenced production in Hungary in 1992, these latter makes gained market share at the expense of Lada. (for further details see Section 4.3. and Table 7)

<sup>10</sup> There used to be a bizarre exchange rate system in the former CMEA. In the late 1980s, when intra-CMEA trade was still conducted in roubles, 1 rouble was equal to some 26-27 forints while 1 US dollar to around 70 forints. The exchange rate of the rouble, though, was around 0.9 US dollar. Thus prices expressed in forint, automatically increased by 2-3 times when the US dollar replaced the rouble.

<sup>11</sup> Private car imports jumped from 5-6 thousand units in 1987-88 to more than 68 thousand units in 1989. (Autókatalógus ‘93, cited in Somai [1993])

<sup>12</sup> Given the lack of sectoral statistics, aggregate data on the decline of the former CMEA-export are not available. Companies, on the other hand, are reluctant to disclose such sensitive pieces of information, especially in these harsh days of transition.

<sup>13</sup> Polski Fiat and Dacia used to be popular makes, too, accounting for 6.5% and 10.2% of the Hungarian car parc in 1990. Their sales, however, collapsed virtually overnight because of significantly higher prices. It did not cause crucial impacts on Hungarian car parts suppliers, though, as shipments to these factories had only accounted for a small proportion of their output.

<sup>14</sup> For a more detailed account and analysis see Havas [1995b-d].

to avoid trade barriers. Ford is also investing in Polish green-field plant to assemble cars and transit vans from 1998. VW has privatised a Slovak company, too, while Daewoo and Peugeot are planning to build cars in Romania. Renault and Rover are considering to invest in Ukraine and Bulgaria, respectively.

Component manufacturing is also undergoing major changes in the Central European countries, partly because of foreign suppliers' entry, and partly as a consequence of the exacting demand of the privatised car assemblers.

#### 4.2.3 *Lessons for Hungarian managers*

Although the actual consequences of the above privatisation projects for the Hungarian parts suppliers cannot be reversed, managers can benefit from studying these cases: a thorough analysis of motives, current moves, and likely future actions, of foreign investors in the other Central European countries might reveal useful conclusions for their own future strategies. The new owners of the Czech and Polish car companies have already started to change their supply base. It is particularly harmful for the Hungarian automotive firms in the case of Poland where they used to have more significant businesses than in the Czech Republic. For instance a long established Hungarian supplier for the previous Polski Fiat models lost its former Polish business: although it had also developed a new dashboard for the new Cinquecento, Fiat chose its own supplier in which it has a majority stake.<sup>15</sup> Even if Fiat is moving away from its in-house component manufacturers, as certain developments suggest,<sup>16</sup> it is rather unlikely that Hungarian companies can assume the responsibilities of being first-tier suppliers. It is even less so, as the overall trend is to reduce the number of direct suppliers in an attempt to cut costs.

Daewoo, on the other hand, intends to order certain parts from Hungarian suppliers, i.e. privatisation in the neighbouring countries might also provide new market opportunities.

Although Hungarian companies traditionally had less business with Skoda than with FSM and FSO, it might prove profitable to study the VW-Skoda case, too, from the point of view suppliers. Given that AUDI, another member of the VW group has recently started building engines in Hungary, and most parts are purchased at a group level rather than by the group members themselves, there might some chances to become a supplier of the VW group through the Hungarian AUDI plant. Hence it is worth citing some observations and a Czech supplier's view from a recent article:

“Helped by its semi-monopoly position, VW has taken a get-tough attitude towards Skoda's parts suppliers (...) Some complain that Skoda wants prices below cost, abusing its monopolistic position on the Czech market to get its way. ‘Skoda wants to take things as cheaply as possible, which I understand,’ says Zdenek Brenner, economic director of Pal (...) ‘But it doesn't want us to project into current prices increases in material costs. If the world prices of zinc and copper go up, they don't want our prices to reflect that. I don't even want to talk about what they said might happen if we don't keep our prices down.’” (Calbreath [1995], p. 9)

The biggest threat for Hungarian suppliers, however, by far is the planned privatisation of VAZ (Lada) by GM for two reasons: (a) this was, and still the largest, market for quite a few Hungarian parts suppliers, and (b) GM is highly vertically integrated, i.e. taking over the rather huge Russian assembly capacity it might want to switch to its own formidable in-house

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<sup>15</sup> It should be noted that Fiat is the most vertically integrated Western European car manufacturer.

<sup>16</sup> See *Europe Automotive Insight*, October 1994 and February 1995.

supplier capacity, in particular as those divisions were suffering from recession in their current markets in the last couple of years.

### 4.3 Re-emerging car production in Hungary

#### 4.3.1 A policy dilemma

Hungarian government officials have long intended to re-establish some sort of car industry for two basic reasons. First, to ease the severe shortage in this market since it has been a rather annoying situation from a political point of view in the most ‘liberal’, reformed planned economy – often referred to as ‘goulash communism’ in Western media. Clearly, this severe shortage have resulted in an ageing, obsolete car park: while the average age of the Hungarian car stock was 5.3 years in 1970, almost two thirds of it were more than 7 years old by 1986.

**Table 1: The distribution of the Hungarian car parc by age, 1986**

Age (years)	Share (per cent)
– 3	19.2
4–6	18.4
7–9	20.4
10 –	42.0

*Source:* Central Statistical Office

Second, car industry was also deemed as a means of industrial modernisation with its exacting technical and organisational requirements. Quite a few industrialists also backed the idea conceiving it either as a major step forward on the road of integration into the world economy, i.e. out of the isolation of CMEA, or as another golden opportunity for free-riding, that is to obtain immense investment funds yet again. Even two consortia were set up by Hungarian companies to promote the re-establishment of car industry.

One question, however, divided this apparently unified camp of promoters, namely whether to opt for large scale manufacturing of car parts with the aim of becoming suppliers of major car producers or to assemble cars again, after a rather long interval, lasting for almost 50 years.<sup>17</sup> As for the second option, it was also an open and much debated question whether to do so within the CMEA or in co-operation with advanced countries. Thus a number of delegations were received from the Soviet Union, on the one hand, and from the US, Germany, Japan and South-Korea, on the other. To cut this long story short, it is safe to point out that no decision was taken by the Hungarian government on this controversial issue. Rather, it was two foreign car companies, looking for favourable new locations and market opportunities, who eventually ‘resurrected’ the Hungarian car manufacturing in the early 1990s.

#### 4.3.2 Magyar Suzuki

Magyar Suzuki Corporation, a Japanese-Hungarian joint venture to manufacture compact cars in Hungary was set up after a fairly lengthy negotiation process by signing the Articles of Association on 24 April 1990.<sup>18</sup> The founding capital was ¥10bn, equivalent to 5.5 bn

<sup>17</sup> These confronting opinions are described in more detail, e.g., by Somai [1993] and Varga [1990].

<sup>18</sup> Talks with Hungarian officials and would be partners started as early as 1985. Further details and analysis of the preparation phase are reported in Havas and Inzelt [1993].

This section is based on interviews with Magyar Suzuki managers, company documents as well as press reports.

Hungarian forint (Ft) then. Shareholders included Suzuki Motor Corporation (40%), Itochu trading house<sup>19</sup> (11%), IFC, International Finance Corporation (9%) and Autó Konzern Rt.<sup>20</sup> (40%).

The \$250m investment has been financed by the equity and loans, guaranteed by the Hungarian government, provided by the Japanese EXIM Bank and IFC as well as a near Ft260m government subsidy. Additional policy measures are also at work to reduce Magyar Suzuki's operating costs: (a) a five-year tax holiday, which can be extended for further 5 years, (b) a five-year exemption from customs duties on parts to be built into cars produced by Magyar Suzuki,<sup>21</sup> and (c) grants from the Ministry of International Economic Relations on a case-by-case base to cover trade fairs' costs.

After thorough training projects, partly conducted in Japan, and a one-week pilot production in August 1992, commercial production commenced in October 1992 with one shift. The then product range included Suzuki Swift 1.0l and 1.3l 5-door hatchback versions, equipped with 3 way catalytic converters. Another model, namely the 4-door Suzuki Swift Sedan, was added in May 1993.

Equity was raised to Ft14bn in two steps in 1993 for two reasons. First, further investment was required to start the production of Sedans, around 900 million forint, basically in pressing equipment and tools. Second, and more importantly, mounting losses also called for a decisive action: as the Japan EXIM Bank has provided its immense loan in yen, the sharply rising value of this currency has resulted in a loss of more than 5 billion forints since accounting is conducted in Hungarian forint. Thus it has seemed reasonable to raise equity and use it to pay back as much loan as possible.

**Table 2: Changes in Magyar Suzuki's ownership structure**

	April 1990	Dec. 1993
Equity (bn forints)	5.5	14.2
Share of owners (per cent)		
Suzuki Motor Corporation	40.0	55.2
Itochu trading house	11.0	13.6
IFC, International Finance Corporation	9.0	3.5
Autó Konzern Rt.	40.0	24.9
Hungarian Investment and Development Bank Ltd.	—	2.8
Total	100	100

Source: Magyar Suzuki

Another major step followed a few months later: the Hungarian managing director became deputy managing director, and its former Japanese deputy was appointed as managing director in April 1994. Magyar Suzuki, however, remained in the red in 1994, too, as recapitalisation and change at the top alone were not sufficient to eliminate losses. Its Japanese owners now expect profits by 1996–97.<sup>22</sup>

<sup>19</sup> Known as C. Itoh then.

<sup>20</sup> Autó Konzern Rt. can be regarded as successor of one of the two consortia, mentioned above, founded to promote car manufacturing.

<sup>21</sup> Further parts, i.e. those above a set quota, are subjects to an 8% duty.

<sup>22</sup> Although exact figures on losses are not disclosed by Magyar Suzuki, its chairman has recently admitted that losses in 1994 amounted to a few billion forints. (*Figyelő*, February 16, 1995)

Clearly, one crucial step on the road to become profitable is to increase production and sales in order to achieve economies of scale. The nominal capacity of Magyar Suzuki is 50,000 units a year. Original plans called for working at full capacity in 1995. It was also planned to export roughly 50 per cent of the output, partly to the then 'hungry' CMEA markets, and partly – once 'the EU content' achieves 60 per cent – to the EU to avoid high tariffs imposed on cars imported from Japan. Production plans, however, had to be revised downward basically every year because the declining standard of living and the importation of second-hand cars depressed the new car market in Hungary, while exports to the former CMEA countries were hindered by the very same factors. Thus some 13,000 units were turned out by Magyar Suzuki in 1993, i.e. 5,000 units less than planned originally. Exports started in 1994, and hence output reached some 20,000 cars (plans called for 29–30 thousands), of which some 3,300 units (instead of the projected 10–12 thousand ones) were exported primarily to Western Europe (some 70 per cent of the total exports) and China (around 25 per cent of exports).

Magyar Suzuki, facing the lower-than-expected demand, is seeking to fully utilise its capacity. To boost local sales it introduced a new model, the 1.6l Sedan in 1994 and also offered a number of small series of former models with special colours and extras (e.g. automatic gearbox) in an attempt to target particular customer groups. Another new model, namely the 3-door hatchback version of Suzuki Swift 1.0l was added in April 1995.

Further, Suzuki Motor Corp. announced in 1995 that it has stopped exporting cars from Japan to Western Europe, and thus its dealers will sell cars assembled in Hungary – as planned at the beginning. Thus the most recent production programme indicates that Magyar Suzuki doubles its output, i.e. 40,000 cars should roll off the assembly line in 1995, of which 50 per cent is to be sold in Hungary, and the remaining half to be exported, mainly to the EU.<sup>23</sup>

Magyar Suzuki is also going to produce four-wheel-drive cars for its Japanese rival, Fuji Heavy Industries (FHI), under an original equipment manufacture deal. From mid-1995 up to 10,000–12,000 units a year will be supplied to FHI, which will sell them in Western Europe badged as Subaru Justy. The two companies also agreed in June 1994 to co-operate in developing automatic transmissions, and hence this more recent agreement might suggest they could move to joint development of cars to cut their R&D costs.

**Table 3: Major data of Magyar Suzuki**

	1992	1993	1994	1995 plan
Production	992	13,021	19,412	40,000
Domestic sales (units)	929	12,659	16,065	20,000
Exports (units)	–	–	3,309	20,000
Sales (Ft bn)	0.6	9.6	15.5	40
Domestic sales (Ft bn)	0.6	9.6	13.3	20
Exports (Ft bn)	–	–	2.2	20
Employment	355	489	857	1,000

*Source:* Magyar Suzuki and press reports

<sup>23</sup> In 1994 some 74,000 Suzuki cars were sold in Western Europe. (*Europe Automotive Insight*, February 1995) Certain models, however, are not assembled in Hungary, e.g. four-wheel-drive sport and utility vehicles. Thus sales opportunities for Magyar Suzuki do not equal to 74,000 cars a year in Western Europe.

From the point of view of suppliers (and would-be suppliers) there are two critical issues: production runs and the technical level of parts demanded by an assembler. The aforementioned production data indicate that Magyar Suzuki buys parts in rather low volumes, and hence its suppliers badly need other businesses.

Magyar Suzuki, however, pays special attention to the profitability of its suppliers as it follows a single-sourcing strategy. Thus it does not want to rely on suppliers who give uneconomical low quotes so as to win orders but then might have to exit because of bankruptcy, leaving Magyar Suzuki with no supply. Moreover, it does believe that economical manufacturing of the parts requested from Hungarian suppliers is possible in spite of the relatively small batches.<sup>24</sup>

Thus the first step to establish this close producer-supplier relationship is a thorough technological and financial audit, covering literally every single aspect of doing business from purchasing inputs through production methods and machinery, to accounting, sales and management, broadly defined. It is followed by a meticulous price setting procedure if the supplier in question seems to be capable to meet all the requirements. During these negotiations, nonetheless, Magyar Suzuki managers have often found that their partners have not possessed reliable information on their products' profitability. In these cases the introduction of a more instructive cost accounting system has been a prerequisite. This 'on-the-job training' for the Hungarian managers in question can, and should, indeed, be regarded as a significant contribution to the diffusion of up-to-date management techniques required by market economy.<sup>25</sup>

Local content – including pressing, welding, painting and assembly accounting for around 20–22% of a Suzuki Swift's value and carried out by Magyar Suzuki itself – was 29% in October 1992, it reached 42% by the end of 1993, and 50% by October 1994. Parts and components produced by local suppliers include battery, seats, horn, windscreen wiper, the majority of the wiring harnesses, glass, paint, upholstery and small, simple pressed metal parts. In other words these are mid-tech products, at best, and thus do not constitute high value-added goods.

The still sharply rising yen makes ever more expensive the Japanese parts and components. Thus Magyar Suzuki is trying to increase the Hungarian content of its cars. To achieve this end, it considers to produce certain parts by itself (mainly pressed metal parts) and/or assist its supplier to add further parts to their product lines. Some 2–3 billion forints will be spent in 1995 to finance this project and the introduction of a 3-door Swift model. Yet, Magyar Suzuki intends to keep importing high-tech, high value added components, such as engine, transmission and undercarriage, from Japan. As these sub-systems account for around 20 per cent of value-added, the local content might eventually reach 80 per cent. Most likely it would take 6–8 years, at least.<sup>26</sup>

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<sup>24</sup> As already mentioned, the nominal capacity of Magyar Suzuki is 50,000 cars a year, not reached as yet. Hence this is the largest series for most suppliers as Suzuki parts in most cases are not compatible with other models and exportation to Japanese Suzuki plants is an exception so far. Aftermarket, though, might provide some additional sales opportunities.

<sup>25</sup> One must not overlook, however, that a topsi-turvy system of prices, taxes, tariffs and subsidies in the former economic system, let alone the very fact that domestic, Western and CMEA markets had been insulated, had made it impossible to apply any reasonable cost accounting. Thus it had been a rational behaviour in a rather irrational system not to waste time and intellectual resources with hopeless efforts aimed at introducing advanced accounting methods.

<sup>26</sup> It depends on sales opportunities and macroeconomic developments, e.g. interest rates, too, as further investments are required either at Magyar Suzuki's Esztergom plant or at suppliers.

**Table 4: Distribution of value-added at Magyar Suzuki (per cent)**

	October 1992	January 1995
(1) Magyar Suzuki	21	23
(2) Hungarian suppliers	8	27
(3) <i>Local content (1+2)</i>	29	50
(4) EU suppliers*	3	14
(5) <i>EU content (3+4)</i>	32	64
(6) Japanese suppliers	68	36
(7) Total (5+6)	100	100

Source: Magyar Suzuki

\* Including associated member countries

Originally it seemed unlikely that Hungarian suppliers could export their products to the Japanese plants of Suzuki Motor Corp., given significant lag in productivity and substantial transportation costs, let alone the then shrinking demand for new cars in Japan. Thus, as already mentioned, they had no other choice than produce economically in relatively low production runs, and make considerable efforts to find additional businesses. However, exports to Japan started in late 1994. Clearly, it is encouraging but one should not forget that this is not a major business yet.

1994 saw another promising development, though not in Hungary – indeed, rather far away, namely in India, where Suzuki has a 50/50 owned joint venture, Maruti Udyog, with the Indian government. Commercial production at Maruti began in 1983, and now it is India's largest car manufacturer with its currently expanded capacity (from 130,000 to 200,000 vehicles a year) It controls 70 per cent of the Indian car market. Suzuki started to export its Alto minicar, produced by Maruti Udyog, to west Europe last year. The Alto is the first model Suzuki has developed at an overseas production base for introduction in overseas markets. If it follows this pattern in Hungary, too, Hungarian suppliers, and in particular their R&D and production engineers, might be involved in really demanding and challenging product development projects. In other words, it would be a clear test, whether Suzuki applies lean production, i.e. it gives increased responsibility to its suppliers in product development.

#### 4.3.3 Opel Hungary

Opel Hungary Vehicle Manufacturing Ltd (GM Hungary until 1994) operates the other Hungarian car assembly plant in a customs-free zone at Szentgotthárd (close to the Austrian border).<sup>27</sup> Unlike Magyar Suzuki it is financed in hard currency, namely DM. Its equity has been increased several times: in 1994 it amounted to DM154.4m, subscribed by GM Opel (65.1%), RÁBA, a Hungarian engineering company (20.6%) and the State Development Institute (14.3%). In January 1995, however, GM Opel acquired the other shareholders' stakes, and thus now it has 100 per cent ownership of Opel Hungary. Initially GM Opel has invested over DM400m with the bulk financed by loans, the European Bank for Reconstruction and Development, e.g., has provided a DM125m loan. Like Magyar Suzuki, Opel Hungary has also received a Ft250m government subsidy, and a five-year exemption from company tax has also been granted, too.

The car assembly plant has accounted for some 25% of the original investment, while the engine factory for the remaining 75%. Some 12,300 Astra rolled off the line in the

<sup>27</sup> This section is based on interviews with Opel Hungary managers, Havas [1994a] and press reports.

Szentgotthárd plant in 1994,<sup>28</sup> of which 1,100 were exported. As Opel's European-wide production and distribution plans for 1995 call for significantly lower exports (i.e. some 550 units) from Hungary, only 11,100 will be produced in 1995. Astras are made of almost exclusively imported parts in Szentgotthárd. Parts purchased in Hungary, now including battery, loudspeakers, paint, pressed metal parts and sun roof, initially accounted for merely 4% of an Astra's value, and 14% by 1994. (Table 6) Opel Hungary intends to increase local content, but definitely not to the order of 60–80%. In this respect it prefers local companies in joint ventures with its traditional Western suppliers.

Opel Hungary (would-be) suppliers, however, have the opportunity to ship their products not only to Szentgotthárd but to other GM plants all over Europe, too, what would mean a much larger volume, i.e. several hundred thousand units a year. Thus they could rely on economies of scale. Indeed, Hungarian parts purchased by other GM companies amounted to some DM100m in 1994, i.e. worth ten times more than Hungarian parts built into Astras produced in Szentgotthárd. Moreover, a substantial increase is expected in 1995 when exports are going to reach DM150m.

As for the engine factory, the initially planned output was above 200,000 units a year. Some 22,000 engines were produced in 1992 and 75,000 in 1993 (recession in Western Europe prevented to reach the planned output, that is, 130,000 units), primarily 1.4l ones, in one shift. Another line of products was added in 1994, namely a range of 1.6l engines. Then production reached 160,000 units (instead of the projected 200,000).

**Table 5: Production of Opel Hungary, 1992–1995**

	1992	1993	1994	1995 plan
Cars (units)	9,300	13,344	12,282	11,100
Engines (units)	22,000	75,000	160,000	260,000

*Source:* Press reports

In March 1995 GM announced to invest a further DM257m in Opel Hungary to double its engine plant's capacity (DM47m) and add cylinder heads to its product lines (DM210m). The investment should be completed by late 1996. Then Opel Hungary would produce 460,000 engines and cylinder heads. It would also require 220 additional jobs, and thus total employment is to be raised to 850.

The engine factory would, therefore, also provide a good business opportunity for Hungarian suppliers, at least as far as production run is concerned, but most parts are imported, just as with the car assembly plant. Constant efforts have been made to source various components from Hungarian firms, but even the technologically most capable ones are unwilling to endeavour such a complex and demanding task as engine component manufacturing is.

<sup>28</sup> Car production commenced in April 1992. Nominal capacity is 15,000 units a year.



**Table 6: Local content of Opel Hungary's main products, 1992–1994**

	Opel Astra per cent	engine per cent
1992	4	1
1993	11	2.5
1994	14	2.5

*Source:* Author's interviews

To conclude, GM Opel and Suzuki Motor have chosen Hungary to build new assembly plants because skilled labour has been relatively cheap, and the government has offered both subsidies and concessions to ease the annoying shortage of cars, and, in the meantime, facilitate industrial re-structuring via promoting the diffusion of up-to-date technologies. As the Hungarian car assembly has been re-established via greenfield investment projects, there has been no 'old' industry either to be replaced or displaced, as opposed to other former CMEA countries. Hence there is no room for conflicts between traditions and new practices, either. One might recall that all the Japanese transplants have been located in the 'desert', i.e. regions with no automotive tradition, both in the US and the UK for the very reason to avoid these sorts of conflicts.

Since these investment decisions have been made, however, marked changes have occurred both in the Hungarian and international economic settings. Shortage has virtually disappeared given liberalised imports, on the one hand, and although demand has recovered since 1992, it is still below the 1988–89 level because of the deteriorating standard of living, on the other hand. Other Central and Eastern European markets have become far less 'fat', too, in part for similar reasons, and in part because of the aforementioned strategic moves of major car companies in the region. Relatively cheap Eastern European cars, most notably Ladas, still pose a significant challenge both for Suzuki and Opel in the local market. As for exports, competition from these cheap cars only effects Magyar Suzuki as it intends to export half of its output, while Opel Hungary sells the vast majority, i.e. some 95%, of its cars in Hungary. Magyar Suzuki exports plan might also be hampered by the still depressed – moreover, mature and saturated – Western European market. Thus these foreign investors are likely to be less satisfied than they expected in the mid- or late 1980s when they had made their decisions to invest in Hungary.

Yet, in 1995 both companies responded with further investment projects. Magyar Suzuki intends to increase the local content in order to offset the rising yen's impact on production costs. Opel Hungary, on the other hand, puts even more emphasis on its engine manufacturing activities via doubling its capacity and adding further components to the current product lines.

Finally, the Hungarian government's policy measures should be assessed in an international context. However, no systematic comparative data are available on investment incentives provided by governments and regional authorities for car manufacturers. Hence only individual cases can be mentioned here. *AutoEuropa*, a joint venture of Ford and Volkswagen to produce minivans in Portugal, has invested PTE450bn (around DM5.4bn) of which PTE130bn has been subsidies, basically financed by EU grants to promote backward regions.<sup>29</sup> In other words, almost one third of the project has been financed by subsidies obtained in the frame of various schemes.

<sup>29</sup> For further details, see Bongardt [1994].

Press reports believed in the late 1980s that Nissan also negotiated with the British government to receive about a third of its total investment costs for its green-field plant to be built at Sunderland, a declining region in the northern part of England. Eventually it was 'only' a fourth of its costs for phases I and II, i.e. £100m regional aid for its £390m project. A few years later it spent a further £217m to expand capacity, of which £25m, i.e. more than 10 per cent, was financed by government subsidies.<sup>30</sup>

In Hungary, by contrast, usually less than 1 per cent of total investment costs were covered by government grants.

#### 4.4 New car sales in Hungary

As already mentioned, new car sales used to be dominated by CMEA-made cars, i.e. Ladas, Trabants, Wartburgs, Skodas, Dacias and Polski Fiats. The two new car assembly plants and the radically increased prices of the former 'champions' have completely changed this picture. However, imported cars are still popular, in other words, competitive with locally assembled ones, in particular Ladas, but Western makes as well, such VW with its 7–8 per cent market share in 1993–94. (The whole VW group has captured an even larger portion of the market, almost identical to Suzuki's slice from the pie.) Thus the local market is more evenly served by a number of makes than in other Central and Eastern European countries with long-established, monopolised car industry.

**Table 7: New car sales and market share of major makes in Hungary, 1992–1994**

Makes	1992		1993		1994	
	number	per cent	number	per cent	number	per cent
Opel	8,238	19.53	17,100	20.42	21,527	20.67
Lada	9,582	22.71	16,654	19.88	17,494	16.79
Suzuki	929	2.20	12,537	14.97	16,775	16.10
Volkswagen	7,227	17.13	10,783	12.87	15,169	14.56
group						
of which						
Volkswagen	5,755	13.64	6,177	7.37	8,608	8.26
Skoda	401	0.95	2,723	3.25	3,721	3.57
Seat	1,071	2.54	1,883	2.25	2,840	2.73
Ford	2,903	6.88	5,314	6.34	5,733	5.50
Renault	2,282	5.41	3,634	4.34	5,356	5.14
Others	11,023	26.14	17,736	21.18	22,112	21.24
Total	42,184	100	83,758	100	104,166	100

Sources: Magyar Suzuki, *Figyelő*, May 12, 1994, HVG, February 11, 1995

#### 5 RE-STRUCTURING IN THE HUNGARIAN CAR PARTS SECTOR

Ownership, organisational and market changes are going on literally month by month at a firm level, and hence the overall picture is constantly changing. In other words, one trying to capture adjustment and re-structuring efforts and results has inevitably to shoot at a 'moving target'. Therefore a really up-to-date statistical system would be required to follow these shifts. As already mentioned, however, no statistics are available on this sector, and hence re-structuring cannot be analysed in a methodologically satisfactory manner at a sectoral level.

<sup>30</sup> For further details, see Hudson [1992]

However, some qualitative observations, based on interview evidence, seem to be relevant for the sector as a whole, and thus worth putting forward here.

## 5.1 Privatisation

Most companies have already privatised in one way or another (see below). As already mentioned, however, exact ownership figures are not available. Yet, a list of actual ownership forms – and hence that of privatisation methods – can be drawn.<sup>31</sup>

### A) DOMINANT FOREIGN OWNERSHIP

- A.1 Greenfield investments with 100 per cent foreign ownership. For the purpose of further analysis, it is useful to identify two sub-sets in this group:
  - A.1.1 Subsidiaries of car manufacturers: Ford Hungária, the engine plant of Opel Hungary and AUDI Hungária Motor Kft.
  - A.1.2 Subsidiaries of component manufacturers, e.g. ITT Automotive Hungary, United Technologies Automotive Hungary, Jung Hungária, Michels Kabel, Keiper-Recaro.
- A.2 ‘Brownfield’ investments: former state-owned companies privatised by foreign investors via setting up a joint venture; e.g. Fékszerelvénygyár.

### B) DOMINANT HUNGARIAN OWNERSHIP

- B.1 State-owned companies, e.g. ELZETT Certa, MGM
- B.2 Privatised former state-owned companies: in most cases privatisation has only been partial so far, usually as a combination of ESOP and MBO projects; e.g. Bakony Művek Rt., MMG Automatika Rt., Perion Akkumulátorgyár Rt.
- B.3 Private companies, i.e. firms established by Hungarian entrepreneurs either in the 1960s or more recently, e.g. ABF
- B.4 Joint ventures with dominant Hungarian private ownership, e.g. RATIPUR Car Equipment Co.

## 5.2 Market changes

### 5.2.1 Market structure, competition

The domestic car parts market, in particular the so-called aftermarket, used to be characterised by severe shortage and monopolies or quasi-monopolies, as already mentioned. Transition has caused significant changes in this respect, too. As former entry barriers have been lifted, new private companies can now enter, and indeed, have already entered. Some companies are still the only domestic producer of given parts. Yet, due to import liberalisation, most firms have foreign competitors in the domestic market, i.e. hardly any firms enjoy monopoly. What is perhaps even more important, a majority of companies are exporting their products to the industrialised countries where they face fierce competition either from local firms or from other exporters (or both). Product quality, product reliability and lower price are mentioned most frequently by managers as the most important sources of competitiveness. Thus there are fairly strong incentives to introduce new products and/or

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<sup>31</sup> Havas [1995b] provides a series of short case studies to illustrate some major characteristics of these groups of companies. For Ford and Audi see also Havas [1994b] and [1995a].

processes otherwise it would not be possible to improve quality and reliability and increase efficiency to be able to quote lower prices than competitors.

### 5.2.2 Market re-orientation

Interviews, indirect evidence – e.g. shrinking Lada sales, as already discussed in Section 4 – and press reports suggest that most companies have lost at least a large chunk of their former markets, i.e. the ex-Soviet and other CMEA markets.<sup>32</sup> Thus they have been forced either to find new buyers – the new car assembly plants in Hungary and/or Western car parts companies operating in Hungary as producers or buyers – or to significantly cut their staff because of shrinking revenues. In most cases the new market opportunities have not compensated for the lost former ones, and thus even those companies who became Magyar Suzuki and/or Opel Hungary suppliers, or found export markets, also had to dismiss some of their personnel. Some companies have not survived this ‘test’: they have been – or are being – dissolved.<sup>33</sup>

## 5.3 Technological changes

Havas [1994a] analysed a sample of 16 Hungarian car parts suppliers from the point of view of technological changes. These were either Magyar Suzuki or Opel Hungary suppliers already in 1992 or 1993, i.e. the new entrants, especially foreign-owned greenfield investments were not covered as most of them started commercial production after 1992, on the one hand, were not Magyar Suzuki or Opel Hungary suppliers. In the other words, Audi, Ford and other foreign investment projects, representing high-tech, high value added products, were not included.

In other words, most companies in that sample did not have access either to foreign capital or to R&D skills and results of large multinational firms. Yet, almost all of them introduced both product and process innovations. As for the sources of product innovations, car producers (or their suppliers) and in-house development have played a significant role in introducing new products. Other sources have included parent companies, commissioned research, other firms (partner in innovation with no other links), and licences. All these innovations came from the sector itself or related industries.

Every single firm in the sample has also introduced at least one major or minor process change. As car manufacturers require total quality management and just-in-time delivery, the introduction of these techniques has been the most frequent process change. (see below) Modernisation of machinery has been the other dominant form of process innovations. Car producers (or their suppliers) have again played a significant role alike in the case of product innovations. A marked, and in fact a self-explanatory, difference is, though, that material and machine suppliers have also been instrumental. In other words, the diffusion of embodied technologies has considerably contributed to technological improvements. Other sources of process innovations have included in-house development, consulting services, parent companies and R&D institutes, including university departments.

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<sup>32</sup> One large company, e.g., used to ship as much as 700,000 units a year to the former Soviet Union. Nowadays its exports are under 50,000 units a year. It has completely lost its former Polish and Yugoslav markets for reasons already analysed in Section 4.

<sup>33</sup> As for the MGM case see, e.g. *HVG*, April 8, 1995 and on *ELZETT Certa Népszabadság*, April 22, 1995.

#### 5.4 Managerial innovations

As already mentioned, Hungarian car parts companies have to adjust a radically altered international and domestic environment (import liberalisation, loss of former markets, new players in Hungary, etc.). Thus those who want to survive have also introduced new management techniques. The most important types of these innovations are total quality management and reliable cost accounting. Their foreign partners usually provide technical assistance and training courses to facilitate the introduction of these techniques.

Just-in-time (JIT) is one of the ‘buzz words’ in automotive industry, and increasingly in other industries, too. However, fashionable terms are frequently used in a somewhat misleading way as most people are not careful enough to apply them appropriately. This is the case with JIT, too. One should make a clear distinction between JIT-production (when parts are produced when the need for them arises, i.e. total inventory in the whole production system is really at a minimal level), and JIT-type delivery (when there is hardly any change in terms of the production, and hence the total inventory is not reduced, but all the ‘physical’ and financial burdens of keeping inventory and of logistics are imposed on suppliers).<sup>34</sup> Clearly, the low capacity of local car assembly does not allow JIT-production in Hungary. Yet, would-be suppliers of Audi, Ford and the Opel Hungary engine plants, as well as those of other customers buying parts in large quantities, i.e. at least a few hundred thousand units a year, might be able to apply JIT-production, and thus eliminate waste, reduce the total inventory of the entire system and cut costs.

There are some exceptional cases, too: e.g. a small company assembling wheels for Opel Hungary has been able to reduce inventory thanks to the close co-operation with its customer. It ships complete sub-systems in every two hours.

Managerial innovations can be analysed at a sectoral level, too, as opposed to individual company level. In lean production first-tier suppliers assume a considerable part of responsibility for product development as well as for organisation of the supply chain (logistics) as they build and supply sub-systems, rather than individual components. In other words they are responsible for second-tier – and indirectly – for third-tier suppliers’ performance, too. Thus they also provide training, technical assistance to their suppliers to facilitate the introduction of an appropriate quality management, cost accounting, production and delivery systems, etc. Western carmakers follow this way, i.e. they cut the number of their first-tier (direct) suppliers and give them more responsibility.

Interviews suggest that this ‘tiering’ has hardly occurred in Hungary yet. One should not be surprised, however, as most Hungarian companies supply fairly simple, individual parts, rather than complex sub-systems to their customers. Moreover, they are not involved in product development, either, as it was discussed in the previous subsection. Yet, some preliminary signs of the emerging new supply system can be observed in certain cases. Suppliers facing the exacting demand of their customers try to apply some principles of total quality management at least.

There are failures, or to put it less harshly, lack of understanding, too. Opel Hungary, e.g., has agreed with a Hungarian company that it would supply a certain part for Astras. In other words, this company has been able to meet the Opel requirements in terms of quality and price. Nonetheless, one month before it was due to start shipments, it informed Opel Hungary that one of its subcontractor – that is, a second-tier supplier in this supply chain – had gone bankrupt, and thus there was no possibility to fulfil the contract. Opel managers were

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<sup>34</sup> For a more detailed discussion see Havas [1994c].

astonished: their would-be partner neither had sufficient information about its supplier, nor an alternative source of supply for such a case.

One should take into account that it is a fairly new concept even for the Western European managers, who are accustomed to, at least, the ‘normal’ mechanisms and requirements of a market economy. Even so, they are far from reaching the full potential of lean production. As a recent analysis of the British automotive industry claims, British managers have a long way to go, too, on the road leading towards ‘tiering’:

“By collaboration, the first tier of suppliers may help to develop the value chain of vehicle manufacturer or the progress and competitiveness of a national or regional industry. There has been little such activity so far: indeed the major UK suppliers could more accurately be called an unconnected group, rather than a first tier.” (DTI and SMMT [1994], p. 11)

Their Hungarian counter-parts, however, have to learn even the ‘simple’ techniques of market economy, too, not only these new principles of lean supply. Moreover, in the mean time they also have to struggle for survival.

## 6 PROSPECTS FOR HUNGARIAN CAR PARTS SUPPLIERS

This section analyses the major characteristics of different types of companies in the framework of a tentative taxonomy. It also considers the most likely prospects for these groups of companies.

### A) DOMINANT FOREIGN OWNERSHIP

#### A.1 Greenfield investments with 100 per cent foreign ownership

##### A.1.1 *Subsidiaries of car manufacturers*

**Products:** mid- or high-tech (e.g. Audi’s five-valve engine: first commercial production), high value-added

**Processes:** state-of-the-art, capital and skill-intensive, but not labour-intensive

**Size:** a few hundred employees at present, significant growth is expected as further stages of investment projects are completed and capacity is built up, yet employment is not going to exceed 1000 in the 1990s in either of these cases

**Portfolio of activities:** specialised in automotive components

**Markets:** a *single customer*, but geographically spread markets, including e.g. South-America in the case of Ford Hungária, i.e. assembly plants of their parent company. Thus basically 100 per cent of output is exported (except a few thousands Opel engines, what is a very small fraction, some 5–6 per cent, of total production).

**Outlook:** rather stable markets as these investments require substantial capital, i.e. these projects present a fairly strong commitment from the respective parent companies, yet depend on overall automotive trends (global and regional demand, competitiveness of parent companies, environmental regulation, technological trends, etc.) and strategic moves of parent companies (sourcing, location, re-location, investment, R&D, etc.)

#### **Impacts on**

- *employment and skills:* although some more companies are likely to invest in Hungary, it is unlikely that these companies would create tens of thousands of jobs. Yet, through their suppliers, i.e. taking into account indirect job creation,

too, their role in employment seems to be more significant. Moreover, they demand highly skilled labour, both directly and indirectly.

- *R&D*: the most important R&D projects are likely to be conducted by their parent companies in their home countries, some minor product development (modification) can be envisaged, especially if they are to supply car assemblers in the region other than their parent companies.
- *demand*: most of them have already started searching for Hungarian suppliers, thus in the medium run they are likely to create demand for mid- or high-tech parts for their products. Given their capacity, it is going to be substantial for individual companies, and significant at the level of various industrial branches, too.
- *suppliers' performance*: strong spill-over effects can be expected (product and process technologies, management techniques [TQM, JIT, cost-accounting, cost reduction, value engineering]). Hence they are likely to 'train' their suppliers to enter new markets.
- *environment*: usually they are more concerned with environmental issues than Hungarian companies used to be. A considerable amount is spent to minimise pollution, e.g. sophisticated systems are introduced to re-cycle waste material. Yet, there is a threat that *some* investors might want to re-locate production activities which are no longer tolerated in their home countries.

#### A.1.2 *Subsidiaries of component manufacturers* and

#### A.2 *'Brownfield' investments*

**Products:** typically mid-tech, some high-tech, mid- or high value-added

**Processes:** state-of-the-art or fairly up-to-date, skill-intensive, less capital and more labour-intensive than in the case of car manufacturers' subsidiaries

**Size:** a few hundred employees at present, further growth is expected as further stages of investment projects are completed and capacity is built up, employment might exceed 1000 in the 1990s in some cases

**Portfolio of activities:** specialised in automotive components

**Markets:** *a number of customers*, usually at least 3–5 leading Western European car manufacturers (Volkswagen, Ford Europe, GM Europe, BMW, Mercedes, etc.) and in some cases Magyar Suzuki, too. Hence the vast majority of output is exported in these cases, as well.

**Outlook:** still fairly stable business opportunities due to the long-established contacts between parent companies and customers. Yet the future of these operations are less certain than for car manufacturers' subsidiaries for two basic reasons. First, their parents have to do business with a number of clients – who, in turn, operate in a highly competitive and volatile, in a way still evolving industry due to (a) new entrants, especially South-Korean ones, and (b) emerging markets, e.g. Pacific Rim, South-America and to a lesser extent Central and Eastern Europe –, and thus risks are multiplied, future demand is more difficult to forecast. For the very same reason, however, risks can be spread more widely, i.e. among more customers, as their market opportunities vary. Second, these projects – so far, at least – represent a different magnitude of investment, i.e. tens – rather than hundreds – of millions of

DM, and hence if future business opportunities become really gloomy, it would be relatively easy to leave, i.e. sunk costs are less significant.

### **Impacts on**

- *employment and skills*: some more car parts manufacturing companies are likely to invest in Hungary, yet, their impact seems to be less significant on employment than that of A.1.1. companies.
- *R&D*: all R&D projects are likely to be conducted by their parent companies in their home countries.
- *demand*: they are likely to create demand for low- or mid-tech parts. Given their size, it might be substantial for individual companies, but less significant at the level of various industrial branches, than in the case of A.1.1. companies.
- *suppliers' performance*: some spill-over effects can be expected (product and process technologies, management techniques [TQM, JIT, cost-accounting, cost reduction, value engineering]). Hence they are likely to contribute the 'training' of their suppliers to make them able to enter new markets, but additional 'training' might be required.
- *environment*: similar threats as in the case of A.1.1. companies

## **B) DOMINANT HUNGARIAN OWNERSHIP**

### *B.1 State-owned companies*

**Products:** typically low-tech with some mid-tech, low value-added

**Processes:** usually simple material processing, ageing, general-purpose, machinery, installed in the late 1970s, early 1980s, at best, typically labour-intensive with some exception (i.e. there are some capital-intensive companies, too given technical requirements, e.g. ball-bearings)

**Size:** up to 1,500–2,000 employees at present, shrinking can be expected

**Portfolio of activities:** diversified, a wide range of products, car parts are often of secondary importance

**Markets:** *a number of customers*, in the case of car parts usually 1–2 leading Western car parts manufacturers (ITT, Rockwell, etc., i.e. no direct link with Western car manufacturers) and in most cases Magyar Suzuki, too. A considerable part of their car parts output is exported in these cases, as well.

**Outlook:** rather uncertain, their customers might find cheaper suppliers.

### **Impacts on**

- *employment and skills*: in certain regions these companies are *the* principal employers. Hence their gloomy outlook, suggesting closure or significant shrinking, is likely to cause severe problems in their regions. Their closure would mean the end of industrial training, too, as they are also the principal providers of practical training for apprentices.
- *R&D*: hardly any in-house R&D projects or demand for extra-mural ones can be expected from them.



- *demand*: some of them are major customers for regional SMEs. Their demand, therefore, is likely to be substantial for these SMEs, but not significant at the level of various industrial branches.
- *suppliers' performance*: hardly any spill-over effects can be expected.
- *environment*: sometimes considerable threats, significant investment might be required to 'clean' their production processes and undo the harmful effects of pollution emitted in the former decades.

#### B.2 *Privatised former state-owned companies (MBO-ESOP)*

**Products:** typically mid-tech or low-tech, mid-value-added

**Processes:** similar to B.1. type companies, usually somewhat less obsolete

**Size:** medium or large

**Portfolio of activities:** medium-sized ones are usually specialised in automotive components, large ones are diversified, then car parts are often of secondary importance

**Markets:** similar to B.1. type companies.

**Outlook:** slightly more promising than for B.1. type companies (that is why their managers and employees acquired ownership stakes in these companies, as opposed to B.1. types). However, as privatisation has been financed through loans – although favourable ones – debt service might threaten their future since hardly any profits can be retained for badly needed investments (in machinery, product development and marketing).

#### **Impacts on**

- *employment and skills*: similar to B.1. type companies.
- *R&D*: some in-house R&D projects or demand for extra-mural ones can be expected from them.
- *demand*: similar to B.1. type companies.
- *suppliers' performance*: some spill-over effects can be expected.
- *environment*: similar to B.1. type companies.

As for *private companies* and *joint ventures with dominant Hungarian private ownership*, it would not be sensible to continue the above analysis as they differ considerably from each other, i.e. their products, processes, market opportunities can vary on a very wide scale. Two distinctive features, however, can be pointed out. First, usually they are much smaller than the above companies. Second, the so-called aftermarket is usually much more significant for them than for the larger ones.

## 7 CONCLUDING REMARKS

Car parts industry has a long-established tradition in Hungary. Although its former single most important market, that is, the ex-CMEA has collapsed, new market opportunities have emerged in the domestic market as Suzuki and GM Opel have opened car assembly plants, and the latter one an engine plant as well. Audi has also invested in an engine plant in Hungary. New export markets can also be found as Western European car manufacturers, working under tremendous competitive pressure due to the still depressed demand in their

home markets and the aggressive growth strategy of the far more efficient lean producers, are also seeking low-cost parts suppliers.

Hungarian suppliers try to adjust to this rapidly changing environment via introduction of new products and processes. In most cases they rely upon licences, know-how, up-to-date management techniques and training provided by their clients and/or their first tier supplier as well as by parent companies in the case of firms privatised by foreign investors. Their in-house R&D capabilities are also used whenever these new technologies need to be modified to their existing production facilities.

Some government policy tools, namely favourable technology loans and tax holidays, have had beneficial impact on technological improvements. Although a loan scheme, devised exclusively for auto parts suppliers, has been launched, more attention should be paid to the re-structuring of this sector. Other measures, such as grants, government sponsored technological training courses, export incentives, etc. should be applied. Japanese experience also shows that licences of advanced technologies, bought by the government and made available for domestic firms free of charge, can have a significant impact on the economic and technical performance of a(n) (re-)emerging sector.

All the aforementioned new market opportunities pose a challenge for policy-makers, namely whether to promote Fordist or lean suppliers. In the former case Hungarian companies, provided that they can quote substantially lower prices due to their significantly lower wage costs than their competitors, might gain market share. However, it seems to be a temporary advantage. Moreover, as Table 8 indicates, the choice between Fordism and lean production has far-reaching impacts on industrial development through skills, wages, R&D capabilities, the diffusion of innovations and market opportunities.

**Table 8: Corollaries of Fordism and lean production**

	Fordism	Lean production
Skills	De-skilling	Skill development
Wages	Sustained low wages	Increasing wages
R&D	Deterioration of R&D capacities	Reinforced R&D efforts Re-structuring of R&D
Diffusion	Certain technologies in a closed circle	Product, process & organisational innovations in a wider circle
Market opportunities	Limited	Wider in the long run (through learning)

Hence it is likely to be a far more beneficial industrial and technology policy to foster lean suppliers, i.e. to promote the acquisition of all the R&D, production and managerial skills and capabilities required by lean production. In other words, if the Hungarian government does not want to be locked into a low-wage, low-tech, low-value-added 'development' path, it needs to provide adequate funds for education and training, promote R&D capabilities and offer investment incentives geared towards lean production. No doubt, it is a rather demanding policy, both in terms of funds and capabilities. It also requires a sound knowledge of these industries, strategies of potential investors and a detailed analysis of various policy measures. Yet, it is worth taking this route as the other, more 'comfortable', one can only lead to sustained underdevelopment.

Foreign investments raise another crucial policy question as to whether apply harsh local content rules or set reasonable export targets together with the provision of a wide range of measures and incentives to facilitate exports. International experience suggests that the former regime might result in striking achievements for a certain period but the most likely outcome is that structural adjustment and technological improvements are hindered on a longer run. Thoroughly devised export incentives, on the other hand, seem to promote sustainable economic and technological success.

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