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**Directing World's Truck-business ó a Regional Issue?**

**An Analysis of World trends during the phase from 1950 to 2000**

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**Work in progress ó do not cite!**

**Introduction: thesis, definitions, sources**

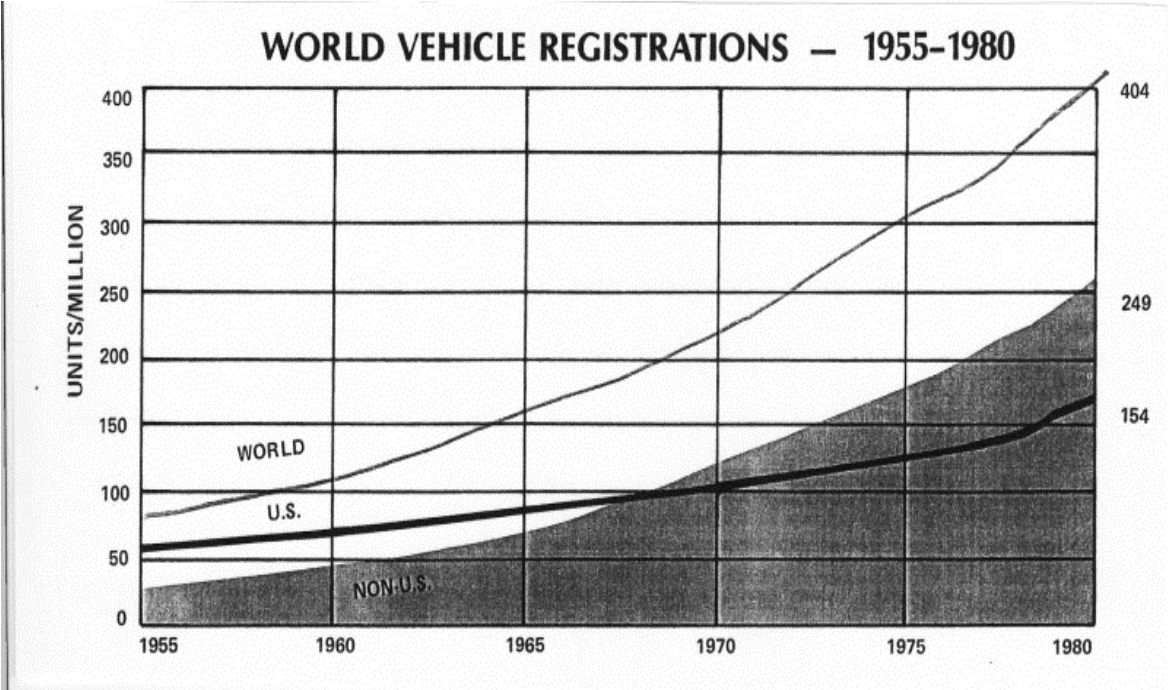
**Our main thesis in the following is:**

*During a period of about 30 years, from 1970 to 2000 the World's truck industry was dominated and directed first from one single region, the state of Michigan (USA), to which since the 1970s a second one was added: the southern half of the Honshu (Japan).*

The contribution is on the truck producing industry, not on trucking or transport. Truck making is an important part of many industries. Many governments protected their national industry for both economic reasons. This applies also to the car industry; however, with trucks also strategic reasons play a role. There is quite some literature on the car industry, including all levels: enterprises, countries and the world. Information in the truck industry is strikingly different: there are a few good books on single companies, information

on countries is thin, or covering only a few of years, but in most cases simply non-existent. I found no serious book on the development of this industry on world scale in the languages I can read. Consequently the following can provide only a few preliminary ideas on development trends during the 30 years between 1970 and 2000. The reasons for choosing these two benchmarks are: Up to the 1960s the World's truck market was totally dominated by the USA. Until the second half of the 1960s more trucks were registered in the US than in the rest of the whole World all together (see figure 1). What happened during this period, happened in the United States, and the decisions were made at the seats of the three large companies, Chrysler, Ford, and general Motors. They all were situated in the State of Michigan. We take figure 1 as a proof for our thesis up to our first benchmark-year 1970. Only since the 1970s the rest of the World market mattered more than that of the United States, and this is why we start our investigation with that year. 2000 was chosen as the end-year of our investigation as it marks the beginning of a substantial change. A new period emerged which reflects the expansion of the Chinese and other Asian markets.

Figure 1



Source: World Automotive market 1981, p. 21

Concerning information and sources for research on trucks the situation is simply deplorable! While we have at World scale abundant information on for instance the United Nations on a couple of selected products, especially from the primary sector, such as the amount of tuna or herring caught, there is very little on the vehicle industry. And if we find some, it usually does not separate trucks from cars. I found two principle sources of information concerning a world overview on trucks. One is the annual statistics of World Automotive Market (later: World Automotive Market Report) which, by distinguishing

between cars and trucks and busses, since the 1950s provides an annual census and production on a national basis. National production is even broken down according to enterprises. A problem is that not all enterprises are included every year. For instance, the American manufacturer Paccar was omitted from the US-statistics in 1995, but the figures for its Dutch subsidiary in, DAF, were given under the entry of the Netherlands.<sup>1</sup> With other words, one needs to be careful, and a structural knowledge on the industry, providing ideas on what is missing, is important. On the other hand this annual statistic provides definitely enough good information for to figure out trends. A second principal source is provided by OICA (*Organisation Internationale des Constructeurs d'Automobiles*) the International Organization of Motor Vehicles Manufacturers in Paris. OICA also provides statistics on production according to countries and enterprises (and on top of it also on sales). Electronic access is (partly) provided for the years since 1998, but not earlier. Unfortunately as with the World Automotive Market (Report) also here some figures are missing for some years.<sup>2</sup>

The OICA statistics have one substantial advantage compared to the ones provided by the World Automotive Market, while the latter distinguishes between cars and trucks; OICA provides more detailed figures on cars, light commercial vehicles, heavy commercial vehicles, and busses. A problem is, of course, the definition; what is the dividing line between light and heavy commercial vehicles? Or: what is a truck?

A truck is a motor vehicle for to transport cargo; the word is not related to any idea of size. The understanding of the English lorry is more precise, here only medium and large trucks are called lorries. Also Minivans and SUVs can be labeled as trucks. In statistics buses are included into trucks if not otherwise stated. However, the amount of busses used to be less than 1 per cent of the number of trucks; such a deviation can be tolerated. The expression commercial vehicle is no better than trucks. The name is given by the destination for commercial use of the vehicle, not referring to size or weight. Commercial means the transportation of goods or passengers. Consequently a taxicab is a commercial vehicle, though in many cases its size and design is no different from a common car. In the USA a car is by definition a commercial if it is owned by or registered with a company in contrast to a private person. This applies also to some European countries. Much better defined are classes of truck, For instance the American classes distinguish on a basis of the weight of the vehicle between trucks of light duty (classes 1 ó 3: up to 6.3 metric t Gross Vehicle Weight (GVW)), medium duty (classes 4-6: between 6.3 t and 11.8 t GVW) and heavy duty (class 7 and 8: above 11.8 t GVW). Still, as a rule of the thumb trucks are larger than cars. Their majority consists of vans and pickups of different size, but not of lorries

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<sup>1</sup> My personal impression is that the editor of World Automotive Market, Auto & Truck International (later: The Educational & Research Foundation of MEMA), collected the figures from the national, private agencies. For its 75<sup>th</sup> edition in 2006/07 we have a proof for it, there the editor thanks various national organizations such as Fourin, Inc., Japan Automobile Manufacturer's Association or the Canadian Vehicle Manufacturer's Association. Strangely the US one(s) is not included. These associations handed over the numbers they had collected from their national manufacturers. However, vehicle makers which did not inform their national association were simply left out, on a national as well as on an international scale. This is my personal explanation why a few companies, such as Freightliner, do not turn up in the statistics. However, the mistakes caused by this lack are negligible on World scale for the overall truck industry.

<sup>2</sup> The reasons may be the same as with World Automotive Market, incomplete information received. ó I hope I will be allowed to visit OICA's archive for information on the period before 1998.

above six t own weight. More representative for our contribution are vehicles such as Toyota Little Ace or Ford Bronco. The relation of light and heavy trucks can be given for a later period (see table 1)

**Table 1:**

<b>Year</b>	<b>Light trucks</b>	<b>heavy trucks</b>
2000	14,993,266	1,977.023
2012	16,986,037	3,743,510

Source: OICA online statistics (read on 4.8.2013)

The difference between light and heavy trucks varies between 3.5 and 7 metric tons according to national and professional definitions.<sup>3</sup>

For the following we need to underline an important methodological remark: The tables take into account only large numbers, those which lay above the threshold given for each table. This means that the single figures given need not to add up to 100 per cent for a country or an enterprise. This contribution is on trends not on precise figures for each country or enterprise (otherwise the tables would add another 50 or even more pages. However, we also underline that the rest is rather negligible. There are no masses of trucks produced in small numbers in many countries. We also need to remind the reader that in some cases figures add up to 99 or to 101 per cent, due to rounding mistakes ó a common result in statistics.

### An approach of macroeconomic history

#### Division and development of the World's Truck Market

An overview of the World truck market broken down according to (sub-) continents shows a 3.8-fold increase during the three decades between 1970 and 2000 (table 2). Of the eight (sub-) continents four were of particular importance, above all North America. It stood in 1970 for 40.0 per cent of the world market and increased its share to 46.9 per cent in 2000. With other words North America was the decisive market for trucks during this period. Its market also represented the highest growth rates by a 4.5-fold increase. This is a bit surprising as the Far East was the most expansive subcontinent during that period; it managed a 4.4-fold increase. Western Europe grew 3.3 times and Eastern Europe only 2.6-fold. That was still better than Latin America with its 2.3 increase. However, that subcontinent as well as the whole of Africa, Asia without the Far East, and the Pacific combined represented less than 10 per cent of the World market and were thus, rather negligible. The most striking issue during these 30 years was the relative stability of the market shares, overall there were little changes. The picture is quite puzzling, because these were the decades when the economies of Japan

<sup>3</sup> OICA home-page, accessed on 15.8.2013.

and that of the other tiger-states – Korea, Taiwan, Hong Kong and Singapore – expanded greatly.

**Table 2:**  
**Census**  
**Overview World truck & bus market, in mill. registered units**

Region	1970	1975	1980	1985	1990	1995	2000
1 Africa	1	2	3	4	4	5	4
2 America, North	20	27	37	42	48	55	90
3 America, South	3	4	7	8	9	6	7
4 Asia, Far East	10	12	17	24	34	38	44
5 Asia ./ Far East (less 1)		1	2	4	5	5	5
6 Europe, East	5	6	10	12	13	12	13
7 Europe, West	8	10	11	13	18	22	26
8 Pacific	1	2	2	2	3	3	3
World total	50	65	89	110	134	147	192

Source: compiled from World Automotive Market (Report)

#### Division and development of the World's Truck Production

The regional development of production (table 3) was less stable compared to the market (table 2). Europe was a big loser in this competition, its share of production was more than halved. This result is partly due to non-economic factors, the collapse of the Soviet Union, which curtailed Russian production about three quarters. However, if we go on at the country level, it was Japan which had to cope with a reduction of its share of more than 60 per cent. But not only its share shrank in a growing market, also its absolute amount of production was nearly halved. We do not find a second large truck-producing nation which had to cope with such a contraction. A really extraordinary slump! Another surprise represents the large winner: North America was able to extend its share substantially. This development was not even over time. While Japan could extend its share towards the middle of our period, it had to face the whole of its reduction during the second part. The Japanese contraction was not compensated by Korea or China. Though still rather small in absolute numbers China and the rest of the World represented the most dynamic elements between 1985 and 2000. However, perhaps the most remarkable result is how the recovery and expansion of the United States. While the performance of other manufacturing industries in the USA during this period was less impressive, the country excelled with its trucks.

Table 3<sup>4</sup>**World production of trucks & busses ( in 1000 units, threshold: 200,000 units)**

Country	1970	1975	1980	1985	1990	1995	2000
France	292	347	440	385	474	393	479
Germany (W)	314	278	358	279	316	280	395
Italy					246		218
Spain					374	321	574
UK	460	381	389	263	270	228	237
Russia			872	879	350	228	233
Japan	2092	2373	4004	4624	3538	2751	2484
Korea					335	552	513
Indonesia							308
China						855	1464
India						289	283
Thailand						315	n.a.
Brazil				207	252	345	323
Canada	250	390	526	856	820	1100	1341
USA	1734	2249	1593	3485	3808	5750	7141
Mexico					222	266	656
World	5834	7078	9633	11450	12112	15213	17807

Source: World automotive market, own calculations

It is, of course, interesting to compare the regional development of markets and production (table 3). During the first part of our time-span the USA were not able to supply their market with own products. While their market-share grew their share of production lagged behind – except during the last years. In 2000 their share of production was a bit larger than their market-share. Europe's market share contracted, but much more so did its share of production. Like the USA, Europe was not able to supply its own market with own products, but unlike the USA this deficit remained a permanent issue on the old continent. Europe's market share declined steadily and so did its share of production. While in 1985 it represented a market share of 22.7 per cent, its share of production was down to only 15.8 per cent. The figures for 2000 were even lower. – Does this signalize a lack of competitiveness? The different picture is to be found in Asia. In the two first benchmark-years Asia's production share was nearly twice its market share! Afterwards the gap was narrowed substantially during the time 1985 to 2000.

<sup>4</sup> This applies to all following tables: If no figure is given, production was below the stated threshold. In case 'n.a.' is to be found, no figures were provided in the sources.

Table 4

**Continents: comparison of World market and World production in per cent**

Region	1970 market	1970 prod.	1985 market	1985 prod.	2000 market	2000 prod.
N. America	40.0	34.0	38.2	37.9	46.9	51.3
E.-Asia	20.0	35.9	21.8	40.4	22.9	26.8
Europe	26.0	18.3	22.7	15.8	20.3	12.0
Rest	14.0	7.8	17.3	5.9	9.9	9.9

Source: compiled and own calculations based on World automotive market (report)

By far the largest producer in Asia was Japan. Its share of production was more than halved; the Japanese performance was even worse than the European one (table5). Can we deduct from these figures first an exceptional but later an exceptional decline of the competitiveness of the Japanese truck industry?

Table 5

**Countries: World production in per cent**

Country	1970	1975	1980	1985	1990	1995	2000
USA	27,7			30,4			40,1
Japan	35,9			40,4			13,9
EU	18,3			15,8			12,0
World	100			100			100

Source: World automotive market, own calculations

An approach of microeconomic history

The overview based on economic history did only to a certain degree support our initial thesis of the decisive role of regions. A supplementary approach based on business history should be tried. Also here we cannot deal with the entirety of information, and, therefore will concentrate on the most important issues. These are, of course, the largest actors, the World's most important suppliers of trucks. List Nr. 1 supplies information. The brackets provide the trademarks which up to 2000 were acquired by some companies. In a few cases, such as Renault, there are double entries, indication that Renault produced more than 25,000 units before it was acquired by Volvo in 2000.

**List 1:**

**List of truck-suppliers**

(more than 25,000 units turned out worldwide, at least in two of our bench-mark years during the period between 1970 and 2000)

Ashok  
BAIC (Beijing Automotive Industry Holding)  
Changan  
Chrysler  
Daihatsu  
Daimler-Benz (Mercedes-Benz, Freightliner Trucks, Sterling Trucks, Unimog, Western Star, Fuso, BharatBenz)  
Dongfeng  
FAW First Automobile Works  
Fiat (Iveco)  
Ford  
Fuji/Subaru  
GAZ  
General Motors (GMC)  
Honda  
Hyundai  
Navistar / International Harvester  
Isuzu  
Kia  
Mahindra  
MAN  
Mitsubishi  
Nissan  
Paccar (DAF Trucks, Kenworth, Peterbilt, Leyland Trucks)  
PSA (Peugeot)  
Renault  
Scania  
Tata  
Toyota (Hino)  
UAZ  
Volkswagen (MAN, Scania)  
Volvo (Mack, Renault, UD Nissan Diesel)

Source: compiled from World Automotive Market (Report)

List Nr. 1 comprehends for both Europe and the Far East more than 10 companies but only five of the USA. A combination of this list with table 2 suggests that the average sizes of companies of these continents are quite different, the smallest ones to be found in Europe and the largest in the USA. However, one might be most curious on Japan, because at the macroeconomic level that country was challenged more than any other. Thus we will look into the development of Japanese truck producers first. Again we have to stress here: we are



researching only trends. And on trucks, not on cars! In 2013 Suzuki produced apart from Japan in China, India, Egypt, Hungary, Indonesia, Pakistan, Spain, and Thailand; but not in all those countries trucks! We also need to keep in mind that the figures provided are not precise enough to be taken as the total reality. Obviously some figures are not included in the statistics. Finally, I collected only sizable figures, defined as more than 5,000 units produced per year. For instance, Toyota took up truck-production in Venezuela. In 1975 and in 1985 Toyota produced in that country (incl. ckd) more than 5,000 units. This entered the following statistics in table 6. Toyota went on producing in Venezuela at least until 2000. In that year it turned out 3,880 trucks. However, this figure was too low to be included into my statistics. My contribution is not about statistics of single truck-makers (see their annual accounts, please!) but on trends in industry and in enterprises in general. ó But now, what was Toyota's World performance concerning trucks?

### Japanese enterprise

In 1970 Toyota produced its trucks exclusively in Japan. Five years later it had started sizable production also in South Africa and Venezuela. Though Toyota added more countries, its turn-out in Japan grew much faster, until it reached its peak in Japan in the 1980s. Since then production contracted in that country, until in 2000 less than 50% of the figure of 1985 was reached. Clearly Toyota followed a strategy of spreading its plants to several countries. The Japanese peak-year 1985 was a double one: also the peak in overall production of Toyota trucks. Still the number of countries with sizeable production-figures of Toyota grew; in 2000 the number of countries except Japan stood at eight. However, the strategy of FDI did not lead to larger figures. Toyota's truck-production declined in spite of these efforts. At this point the question remains open about the reasons, disability to compete successfully or concentration on other, more lucrative segments (personally I would first look into the second option).

**Table 6**

**Toyota: production of trucks in 1,000, threshold: 5,000 units**

Country	1970	1975	1980	1985	1990	1995	2000
Argentina							17
Australia			33	69	48	54	33
Brazil					5		
Colombia						7	
India							22
Japan	746	876	990	1096	866	739	436
Malaysia				10	17		
New Zealand				5	11		
Portugal			9	5	11	15	5
South Africa		27	35	36		37	27
Taiwan							19
Thailand							79
USA							253
Venezuela		6		10			
<b>Total more than</b>	<b>746</b>	<b>909</b>	<b>1067</b>	<b>1231</b>	<b>958</b>	<b>854</b>	<b>845</b>

Source: compiled from World Automotive Market (Report)

Toyota was and is not only the largest Japanese truck-maker but was also considered a trend-setter in the Japanese automobile industry. Is this mirrored also in the truck-industry? Japan's second largest supplier was Nissan. It produced in 1970 all of its 479,000 units in Japan, extended its output there up to 1985 but reduced it afterwards in 2000 to less than one third of its peak in 1985 (table 7). This reduction was to a large extent compensated by production abroad; in 2000 Nissan turned out 1.6 times more abroad than in Japan. Especially output in the USA was much larger than in the home-country. Compared to Toyota, Nissan started ten years later producing substantial amounts abroad. However, after 1985 Nissan followed Toyota's strategy to transfer its production to countries of demand much more vigorously than Toyota itself.

Table 7

**Nissan: production of trucks in 1,000, threshold: 5,000 units**

Country	1970	1975	1980	1985	1990	1995	2000
Australia				22	21	11	20
Japan	479	572	751	671	458	217	208
Malaysia				11	14		
Mexico				16	38	50	44
Portugal					5	5	
South Africa				19		24	20
Spain					80	101	104
Thailand							79
USA				107	139	132	268
<b>Total more than</b>	<b>479</b>	<b>572</b>	<b>751</b>	<b>846</b>	<b>755</b>	<b>540</b>	<b>731</b>

Source: compiled from World Automotive Market (Report)

The third largest Japanese producer was Mitsubishi, which of its main plants turned out 211,000 595,000 and 303,000 trucks in our benchmark years. Again we see the up and down. Like Nissan, Mitsubishi started late in diversifying its plants towards several countries. In 2000 its largest plant abroad was not situated in North America but in Taiwan.

A certain group of Japanese truck makers did not invest substantially abroad until 2000. This group comprehends Daihatsu, Hino, Honda, and Subaru. Table 8 shows that this group suffered a contraction of 63% between 1985 and 2000.

**Table 8: Truck-production of Japanese non FDI-companies (in 1000 units)<sup>5</sup>**

Name	1970	1985	2000
Daihatsu	148	417	170
Hino	57	63	48
Honda	116	164	59
Subaru	./.	325	80
Total	321	969	357

Source: compiled from World Automotive Market (Report)

The contrasting group, comprehending Isuzu, Mazda, Mitsubishi, Nissan, Suzuki and Toyota, invested abroad, in most cases substantially only after 1985 (Table 9). And the strategy of FDI paid: the contraction in this group was not about two thirds as in the non-FDI group but less than 20 per cent.<sup>6</sup>

**Table 9: Truck-production of Japanese FDI-companies (in 1000 units)**

Name	1970	1985	2000
Isuzu	127	374	528
Mazda	205	379	167
Mitsubishi	211	595	447
Nissan	479	846	731
Suzuki	127	546	513
Toyota	746	1231	845
Total	1895	3971	3231

Source: compiled from World Automotive Market (Report)

During our period 1970 to 2000 the by far largest market for trucks was North America. Did it pay for Asian truck-makers to invest there? Table 10 shows the amount of turnout of these companies which at least in 2000 produced also in the USA. Their contraction was slightly lower than that of the total of the FDI-group. Thus, was North America the wrong place to allocate FDI? No, we rather think of an exceptional case distorting a general picture (though it already announces the new trend after 2000). A closer look reveals that 1) the groups are identical, except Suzuki and Mitsubishi, and 2) Suzuki's FDI in China expanded already in 2000 to a large extent.

<sup>5</sup> This group includes companies with little FDI, such as Daihatsu, which produced in 1985 5,000 units in Australia, and in 1990 9,000 units in Malaysia. In 1995 and in 2000 no FDI turned out more than 5,000 units which is our threshold. (Source: World Automotive Market (Report)).

<sup>6</sup> More exact a contraction of only 18.6%.

**Table 10: Truck-production of FDI-companies with FDI in USA (in 1000 units)**

Name	1970	1985	2000
Isuzu	127	374	528
Mazda	205	379	167
Nissan	479	846	731
Toyota	746	1231	845
Total	1557	2830	2718

Source: compiled from World Automotive Market (Report)

Though we had six companies producing also abroad, there were only two of them, Nissan and Suzuki, which manufactured more trucks outside Japan than in the mother country. But only a single enterprise only Suzuki managed by following that strategy to turn out in 2000 nearly as many trucks as in the peak year 1985. Summing up the Japanese performance, we can see that the contraction of production between 1985 and 2000 was substantial, but it was partly compensated by growing figures turned out abroad. Those enterprises which did not follow the FDI-strategy suffered a contraction of two thirds the others of only about 20 per cent between 1985 and 2000.

### **American enterprise**

The US-truck industry showed a quite different picture compared to the Japanese one. The market was dominated by only three companies, Chrysler Ford, and General Motors. Other companies which concentrated on heavy trucks such as Mack, White, or Navistar played minor roles. Compared to the three large companies the rest was about two digits smaller. For instance, Navistar turned out only about 5 per cent of each of the big three ones. Ford's production grew all the time, but more outspoken since 1985, while with GM it was the other way round (table 11 and 12).

Table 11

**Ford: production of trucks in 1,000, threshold: 5,000 units**

Country	1970	1975	1980	1985	1990	1995	2000
Argentina	9	10	41	13	6	23	26
Australia	16		21	27	25	19	26
Belgium	18	24	34	36	73	70	89
Brazil	8	42	38	43	48	67	40
Canada	156	155	186	164	131	284	393
Malaysia				5	10		
Mexico	14	22	49	36	36	50	97
Philippines		9	5				
Portugal					18	10	
South Africa	11		17			10	13
Spain					6		
Taiwan					13	20	5
Turkey				10	8	6	41
UK	141	129	138	101	132	150	110
USA	641	692	582	1218	1394	2079	2404
Venezuela	5	16	17	12	7	14	10
<b>Total</b>	<b>1019</b>	<b>1099</b>	<b>1128</b>	<b>1665</b>	<b>1894</b>	<b>2782</b>	<b>3254</b>

Source: compiled from World Automotive Market (Report)

Table 12

**GM: production of trucks in 1,000, threshold: 5,000 units**

Country	1970	1975	1980	1985	1990	1995	2000
Argentina	9	9					
Australia	29	27	22	16	17		
Brazil	11	39	44	32	39	39	78
Canada	68	189	255	281	293	277	331
Germany	9			35	19		
Mexico	13	20	22	37	62	49	259
Philippines		5					
Portugal					15	29	37
South Africa	10	19	15	15	n.a.	18	23
Spain					10	49	40
UK	102	91	96	61	20	13	15
USA	614	952	776	1538	1473	1856	2232
Venezuela	5	10	19	11	5	14	9
<b>Total</b>	<b>870</b>	<b>1361</b>	<b>1249</b>	<b>2026</b>	<b>1936</b>	<b>2344</b>	<b>3024</b>

Source: compiled from World Automotive Market (Report)

Chrysler's production was smaller than those of GM and Ford but still large (table 13), while Navistar's was dwarfed (table 14). Also Chrysler showed a trend of expansion but had some problems during the 1980s.

Table 13

**Chrysler: production of trucks in 1,000, threshold: 5,000 units**

Country	1970	1975	1980	1985	1990	1995	2000
Argentina	6	6					
Australia		6					
Austria							30
Brazil	3	11	7				5
Canada	10	25	53	390	311	440	413
Colombia			10				
France		25					
Mexico			50	27	59	79	222
South Africa	4						
Spain	5	6					
Turkey					5		6
UK		19					
USA	n.a.	320	119	214	354	1138	1351
Venezuela		8					
<b>Total</b>		<b>426</b>	<b>239</b>	<b>631</b>	<b>718</b>	<b>1657</b>	<b>2027</b>

Source: compiled from World Automotive Market (Report)

In order to provide a more useful picture for to compare with other countries, we include one of the smaller US-enterprises, Navistar. This firm had a sizable turnout in 1970 which was halved for the next 20 years, a trend which it could change to the better during the 1990s.

Table 14

**International Truck And Engine Corporation/Navistar / Int. Harvester / IHC production of trucks in 1,000, threshold: 5,000 units**

Country	1970	1975	1980	1985	1990	1995	2000
Brazil	8						
Canada	14	15	16	11	9	14	19
Mexico	1						
USA	155	102	66	74	72	143	n.a.
Venezuela	1						
<b>Total</b>	<b>179</b>	<b>117</b>	<b>82</b>	<b>85</b>	<b>81</b>	<b>157</b>	<b>n.a.</b>

Source: compiled from World Automotive Market (Report)

In contrast to the Japanese enterprises all four US companies had already in 1970 substantially invested abroad. In fact, when countries are counted, Ford and GM were concerning trucks more international in 1970 than Toyota was in 2000! For Japanese enterprises the FDI-strategy was a key to success. But compared to the US firms another contrasting and surprising result is, for American enterprise that strategy did not show the same remarkable results. There is, however, a remarkable exception: Canada. And for 2000 Mexico was added as a second exception. The development patterns of the three large companies were the same: largest turnout in the USA, early and massive investment in Canada since the 1970s and massive FDI also in Mexico during the last couple of years. The NAFTA agreement (*North American Free Trade Agreement*) was signed in 1994, providing mutual custom-free access to the markets of the USA, Mexico, and Canadian. It seems that FDI in Mexico was triggered by NAFTA. When not the number of countries with FDI is counted but the amount of production, the strategies of US and Japanese enterprises are in stark contrast. The Japanese firms invested abroad especially since the second half of the 1980s. They executed their FDI not only in (relative) nearby counties such as Taiwan or Malaysia, but far away in the United States or Colombia. In contrast, in 1970 American enterprises owned a striking diversity in FDI, but concentrated their engagement more and more on their own North American continent. While in 1970 they produced there 80 per cent at their continent, this concentration went up in 2000 to more than 90 per cent.<sup>7</sup>

### **European enterprise**

In 1970 European enterprises turned out about 18.3 per cent of world production. But during our whole period their share dwindled. Compared the North American and Japanese figures, they were dwarfed. Russian production was included into statistics only since the 1985. The Soviet Union turned out substantially more trucks than Russia, a fact which added to the European decline.

There were five sizable producers of trucks in Europe, Daimler-Benz, Fiat, PSA (Peugeot), Renault, and Volkswagen (VW). Here again we see the same patterns as in Japan or in the USA: All these companies are known first of all for their cars. Enterprise which turned out only heavy trucks such as Hino or Scania did not enter the league of 100,000 units. The trend in growth was fairly the same with the different enterprises: Upswing until 1980, stagnation during the 1980s and again moderate growth during the 1990s. The figures do not mirror the famous oil-price crisis in 1973/74 and 1979/80, hard times came during the 1980s, one decade earlier than the problem-phase in Japan. The European trucks firm did not differ in sizes as much as the Japanese ones. The relative largest one was Renault (table 15).

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<sup>7</sup> Chrysler 1970: 81%, 2000: 98%; Ford: 80% / 90%; GM 80% / 95% (calculated from World Automotive Market (Report)).

Table 15

**Renault: production of trucks in 1,000, threshold: 5,000 units**

Country	1970	1975	1980	1985	1990	1995	2000
Argentina						13	14
France	104	98	221	214	325	261	296
Portugal					11	8	
Spain					73	15	57
<b>Total</b>	<b>104</b>	<b>98</b>	<b>221</b>	<b>214</b>	<b>409</b>	<b>297</b>	<b>367</b>

Source: compiled from World Automotive Market (Report)

Five of the Japanese enterprises (Isuzu, Mitsubishi, Nissan, Suzuki, and Toyota) and three of the American ones were larger than the biggest European one. Surprisingly it was Volkswagen which figured as the smallest (of the five larger) European firms (table 16) with a turnout between 100 and 200,000 units only.

Table 16

**Volkswagen: production of trucks in 1,000, threshold: 5,000 units, incl. subsidiaries (Skodai )**

Country	1970	1975	1980	1985	1990	1995	2000
Argentina							6
Australia		7					
Brazil		7	5	50	54	93	68
China							n.a.
Czech Rep.						21	23
Germany	103	72	115	81	90	85	118
Mexico		16	14	16	10	13	
South Africa		14	6	5 *		6	n.a.
Spain					38	7	57
Taiwan							5
USA			28				
<b>Total</b>	<b>103</b>	<b>116</b>	<b>140</b>	<b>142</b>	<b>192</b>	<b>225</b>	<b>273</b>

FAW- and Shanghai-Volkswagen not included in source

Source: compiled from World Automotive Market (Report)

The examples of VW and Renault represent also the two types of European truck makers, those which invested abroad early and widespread (Daimler-Benz and VW) and the latecomers PSA and Renault. Fiat represented a place in between these groups, with FDI in several countries during the second part of the 1980s. Except VW European firms avoided investing in Asia, but also Japanese enterprise except Nissan was not heavily engaged in Europe. American firms invested early and sizably in Europe, but not in East Asia. Still their European FDI hardly grew over time. European enterprise could neither organize an



expansion like their Japanese competitors managed during the 1980s, nor the growth which American firms enjoyed a decade later. From a world perspective they became marginalized, both as truck producing countries and as well as enterprises.

## Conclusion

Our thesis was: *During a period of about 30 years, from 1970 to 2000 the World's truck industry was dominated and directed first from one single region, the state of Michigan (USA), to which since the 1970s a second one was added: the southern half of the Honshu (Japan).*

Throughout our period three continents stood for 90 per cent of the World market: The USA, the Far East and Europe (West plus East). The evaluation showed that Europe as producer already during the 1970s dropped out of being important in the truck business. While in 2000 its share of the world market was about 20 per cent, it produced only 12 per cent of world supply. The old industrial continent of Europe never managed to balance its demand by own production. Worse: the gap widened over our 30-years period. North America made the opposite move and turned from an importing continent to be self-supplying and even exporting continent. Japan, always with an extremely positive balance of trade in trucks, had to reduce its exports to a large extent. This result underlines the importance of Japan and North America in the truck business (see tables 2 and 3).

When FDI is taken into account, we not only receive the same ideas but the trend is very much underlined. Ford and GM owned a sizable share of European production through their plants in the UK, Belgium, Portugal and Spain. However, far more important was their FDI in their neighboring countries Canada and Mexico. Also important was Japanese FDI, foremost into the USA but also in other markets. While in 2000 American transnational enterprise produced 13.0 per cent of world production in their transplants abroad, their Japanese competitors managed only 10.2 per cent. This was a substantial move, and it was achieved in much less time, compared to the US-industry; still the efforts were not sufficient to compensate the reduction of production at home (table 16). Apart from these different results, US and Japanese production together represented an overwhelming World share of 77 per cent in 1970, 80 per cent in 1985 and 67 per cent in 2000.

**Table 16 Share of world production (incl. FDI, in %)<sup>8</sup>**

<u>Enterprises from</u>	<u>1970</u>	<u>1985</u>	<u>2000</u>
Japan	37	43	20
USA	40	42	47
Europe	20	10	10

Source: calculated from World Automotive Market (Report)

<sup>8</sup> We have to admit inconsistencies: For instance, the Japanese share of the World in 1970 in table 17 is larger than in table 4. These inconsistencies are based on the same inconsistencies in the source material in the World Automotive Market (Report).

Transnational enterprise directs its business across national borders, regardless whether plants are situated in its own country or not. With other words, decision making in transnational enterprise is concentrated at the center of the respective firm. Wishes of daughter companies abroad may be overruled.<sup>9</sup> All three large American truck companies are situated in the state of Michigan, which represents about 250,000 square kilometers. The headquarters of Japanese enterprise are concentrated at the southern parts of the provinces Kanto, Tokai, and Chugoku, regions of together about 100,000 square kilometers. Out of these 350 square kilometers the world's truck industry was directed between 1970 and 2000. The amount of land on earth is about 150 million square kilometers. The relation between these figures is 0.23 per cent. Thus we can fairly state the World's truck industry was under the direction from two óat World scale - small regions. Decision and directions in the truck business were regional issues.

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<sup>9</sup> A classic example in this context is the wish by Opel to sell its vehicles outside Europe. Opel argues that with the contracting market in Europe it has little chance for survival in the long run without this access. However, its mother-company GM denies Opel the right to sell on other continents.