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**Rivalry and Regulation:
German Cargo Transport Policy, 1920-2000***

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1. Introduction

It is the aim of this paper to demonstrate the special conditions under which truck transport developed in Germany. After the depression following World War I, the German economy boomed only in the short period between 1925 and 1929, providing good conditions for the rise of truck transport. But Nazi rule restricted truck transport for hire and forward heavily in favor of the railway. Thus, an important branch of the transportation economy could not develop fully as it did in the US or in England, where truck transport gained a great share in the transportation trade of the 1930s. Beginning in 1931, the railroad's dominant position in traffic policy hindered the emergence of a powerful forwarding sector as an essential element of the slowly developing "tertiary sector" of services, and characterized the abundantly mentioned weakness of the service sector in the Federal Republic of Germany up to the beginning of deregulation in the 1980s.

In the 19th century, railways in Europe had been state-owned organizations. They were the greatest employer and at the same time, governmental cash cows because they made great profits. Since 1920, we can observe in all European countries an emerging competition in cargo transport between rail and road and a rising effort to regulate this competition in favor of the railway. It would be a rich field of research to compare the various forms of regulating the competition between rail and road in the different European countries. I will focus here on Germany.

German states had a strong position within the empire ("Reich"). They had the power to create traffic policy and they were owners of their respective railways until 1920. In the transition from the emperor-lead Reich to a republic, the new Weimar constitution of 1919 demanded in §89 the unification of the several state-owned German railway organizations (not really companies) into one big organization, the "*Reichsbahngesellschaft*" (the German railway company, in the following: *Reichsbahn*), owned by the central level of the Reich in 1920.¹ In 1924, this organization was converted into a private company (similar to a joint-stock company) under the control of the victorious powers to support the annual reparation payments of Germany, which were 660 million Reichsmark after World War I. This was

¹ Act of 30th April 1920 to unite the German state railways, in: RG 1920, I, p. 773-790

agreed on in the Dawes plan in 1924.² Thus the *Reichsbahn* became a cash cow for the reparation. According to Mierzejewski the Dawes plan had the aim to convert the *Reichsbahn* from a commonweal organisation into a profit-oriented company on the Western model;³ the railways in French, Great Britain and USA were run by private companies.

The *Reichsbahn* had to bear a heavy burden. Besides the reparation payments, the company had to replace locomotives and wagons destroyed or damaged during the war; and it had to replace the railway material which had to be sent to France and Belgium, according to the treaty of Versailles. Numerous additional trains loaded with cargo (e.g. coal) for France and Belgium had to be scheduled each day as reparation contributions. Extra payments as social burdens had to be made for overemployment of staff, due to capacity extension during the war and due to the demobilization decree⁴ as well as for pension schemes resulting from the union of the state railways. These burdens provided strong incentive for organizational and technical rationalization within the *Reichsbahn*,⁵ mirroring the general worldwide wave of rationalization in the 1920s.

The rivalry between rail and road emerged during the 1920s. The importance of trucks for transport of goods was made clear during the First World War and in the conflict in the Ruhr region. When, in 1923, French troops occupied the Ruhr region and seized the transport capacity of the railways, trucks were able to make up the resulting shortfall in goods transport capacity, providing a large-scale demonstration of their usefulness.⁶ In the 1920s, the number

² See U. Ruser: *Die Reichsbahn als Reparationsobjekt (Reichsbahn and Reparation)*, Diss. Freiburg 1980 and Pohl, Manfred: *Von den Staatsbahnen zur Reichsbahn 1918-1924 (From the state-owned railways to the Reichsbahn)*, in: Lothar Gall, Manfred Pohl (Ed.): *Die Eisenbahnen in Deutschland (Railways in Germany)*, München 1999, p.71-108. In addition to the sum of 660 Mio. RM the *Reichsbahn* had to pay 250 Mio. RM p.a. out of a special transportation tax to the reparation account and to make savings for reserves of 100 Mio RM p.a. until the sum of 500 Mio. RM was achieved.

³ Mierzejewski, Alfred: *The Most Valuable Asset of the Reich – A History of the German National Railway*, Vol. 1, Chapel Hill, 1999, chapter 4.

⁴ Verordnung über die Einstellung und Entlassung von Arbeitern und Angestellten während der Zeit der wirtschaftlichen Demobilmachung (*Ordinance of hiring and dismissing workers and employees during the time of economic demobilization*), vom 16. Februar 1920, RG, I, 1920, S. 218-227

⁵ Mierzejewski, a.a.O., chapter 5C.

⁶ C. Merki: *Der holperige Siegszug des Automobils 1895-1930 (The uneven triumph of the automobile 1895 – 1930)*, Wien 2002, O. Cohausz: *Der französisch-deutsche Eisenbahnkrieg im Ruhrgebiet 1923 (The German-French railway war in the Ruhr district in 1923)*, in: *Jahrbuch für Eisenbahngeschichte*, Bd. 6, 1973, S. 5-25, Anita Kugler: *Von der Werkstatt zum Fließband – Etappen früher Automobilproduktion in Deutschland (From garage to conveyor belt – stages of early automobile production in Germany)*, in: *Geschichte und Gesellschaft*, Bd. 13, 1987, S. 325 sowie: *Der Lastkraftwagen und die Rheinlande (The Trucks and the Rhineland)*, in: *ADAC-Motorwelt*, 1930, Nr. 27, S. 9-10

of trucks employed increased rapidly in Germany, with an average growth rate of 22% p.a.⁷ At the same time, the efficiency of truck transport in the 1920s rose as the truck offered advantages in terms of speed and cost compared to rail transport.⁸ According to a study by Mellerowicz, the cost of transporting goods by road fell by 60% in the 1920s due to technical progress in truck construction as e.g. ballon tires.⁹ The efficiency of truck transport is also illustrated by the fact that the average speed of truck transport was put at 14 km/h, as opposed to 1.5 km/h for less than wagon freight and 3 km/h for fast freight transported by rail.¹⁰

The emergence of road transport of passengers and of cargo (motor transport) resulted in new competition for the railway, which became monopolistic for transport service in many regions without sea harbor connections or canal systems at that time. The opponents of this competition – the motor transport on the one side and the railway on the other – had completely different cost structures and completely different conditions of operation and ownership. Since the state had financed the road system, motor transport didn't have to bear high fixed costs, but rather was only responsible for its individual share of roadwear, and this being proportional to driving distances and, as well, it was paid for by the petrol tax as a variable cost. Therefore, motor transport had to bear only the low fixed costs of its truck respective car. Motor transport could operate by individual decisions at any time of the day, not being tied to a timetable, and could reach each destination on the road, even on roads in bad conditions. The property structure of motor transport was individual. To the contrary, the railway was owned by the state, had to cover high fixed costs due to the investment in a large network of tracks and safety and signal systems, was organized as one big organization, operated according to a timetable, had to coordinate its different trains at railway stations and on lines and was tied to its network of rails. As these incompatible transport systems clashed

⁷ Lastkraftwagen in der Volkswirtschaft (*Trucks in the national economy*), Institut für Konjunkturforschung, Berlin, weekly report for 7 May 1930, p. 23-24. The report provides statistics concerning truck density in various countries in 1929: 1 truck per 38 inhabitants in the USA, per 118 in France, per 203 in Great Britain and per 486 in Germany.

⁸ See also Peter Borscheid: LKW contra Bahn (*Trucks against Rail*), in: Harry Niemann und Armin Hermann (Hrsg.): Die Entwicklung der Motorisierung im Deutschen Reich und den Nachfolgestaaten (*The development of motorisation in the German Reich and its successive states*), Stuttgart 1995, S. 23-38, and Heidi Rohde, Transportmodernisierung oder Verkehrsbewirtschaftung? (*Modernisation of transport or transport management?*), Diss. Marburg 1997, Frankfurt 1999, Frank Lippert: Lastkraftwagenverkehr und Rationalisierung in der Weimarer Republik (*Truck traffic and rationalization in the Weimar Republic*), Diss. Marburg 1997, Frankfurt 1999,

⁹ K. Mellerowicz: Der Stand des gewerblichen Güterfernverkehrs (*The position of commercial long distance freight transport*), in: Die Strasse, Heft 5, 1935, p. 145.

¹⁰ Otto Krahl: Eisenbahn und Kraftwagen (*Railway and automobile*), in: HAFRABA-Mitteilungsblatt, Heft 10, 1930, p. 4f.

with each other in the 1920s, the road-rail competition became an important issue subjected to public debate.

The railroad network had been – besides channel systems - the first entity in history where one can study the economic law of **subadditive cost structures**. This can be explained as follows: Consider the situation where one town in a country is not connected to an existing network of tracks. Then only the investment of the connecting line from the town to the network has to be made to get connected to all the other towns (say the number of n towns) in the network. So only an additional investment is necessary to reach all the other towns and not the complete investment. Corresponding to this special cost structure, there is a rapidly growing utility for the usage of the network. In the network of n towns one has $n^2 - n$ relations. So the utility grows quadratically with the number of towns connected, which is known as the **network externality**. Both of these factors, the subadditive cost structure and the network externality of utility, led to an explosive growth of the network, as one can see in the history of the British railroad network in the 19th century¹¹ and today with the example of the Internet. Examples of other networks emerging historically and following the railway are telegraphy, telephone, and utilities.

The subadditive cost structure gave rise to the theorem of a **natural monopoly** of the railway, in that one network has lower costs than two competing networks. Other examples for natural monopolies are the networks of telegraphy and telephone and utilities. But, this theorem of a natural monopoly of the railway contributed to the strong position of the railway and had been extended in the debate of the 1930s to the monopoly of the railway for the whole cargo traffic (see below). In the modern theory of competition, the view of the natural monopoly of the railway has been differentiated. The natural monopoly has been restricted to the network of tracks only. But, there should be several competing companies operating the trains on this network.¹² As Fremdling and Knieps had pointed out, in the beginning of the railway system there had been strong competition between different lines, even parallel lines¹³. But as the railway industry matured, the advantages of the subadditive cost structures emerged more

¹¹ The growth started slowly in the first 15 years from 100 miles in 1830 to 2,600 miles in 1845. The network grew rapidly in the 6 years following about 3,000 miles and reached 6,000 miles at the end of 1850, see Michael Robbins: *The Railway Age*, London 1965, p. 31s

¹² Laaser, Claus-Dieter: *Die Bahnstrukturreform – Richtige Weichenstellung oder Fahrt aufs Abstellgleis?*, Kieler Diskussionsbeiträge (*The Reform of the railway*), Nr. 239, 1994

¹³ Fremdling, R. and G. Knieps: *Competition, Regulation and Nationalization: The Prussian Railway System in the Nineteenth Century*, in: *Scandinavian Economic History Review*, Vol. 1993, No. 2, p. 129-154

clearly. When in Prussia the state took over the railways, the concept of competition was seen as a distortion leading to losses and the concept of the natural monopoly became the official state doctrine of the railways.

In modern economic theory, the concept of natural monopolies has been generalized as the concept of network goods, including also computer networks and compatibility of software.¹⁴ One example is Microsoft with its quasi monopoly of word processing software, providing a great utility in the worldwide exchange of text files.

¹⁴ Katz, M. and C. Shapiro: Network Externalities, Competition and Compatibility, in : American Economic Review, Vol. 75, 1985, p. 424-440

2. Regulation in the Weimar Republic

A series of memoranda on road-rail competition were submitted in 1930. The first was "*Reichsbahn und Kraftwagenverkehr*" (Railway and Motor Traffic) that was put forward by the German *Reichsbahn* in January 1930. It argued that increasing road traffic would lead to significant revenue shortfalls for the railway both for passenger transport due to competition from buses, as well as for freight traffic because of competition from trucks. A shortfall of 320 million RM (Reichsmarks) was estimated for 1928.¹⁵ The *Reichsbahn* justified its price system for goods traffic in macro-economic terms. By asking higher prices for the transport of valuable goods, so went the argument, it was possible to subsidize the transport of bulk goods. This policy was economically necessary to ensure that peripheral production sites that depended on raw materials remained competitive. As the road transport industry limited itself to the lucrative areas of business, it did not fit into this macro-economic tariff system.¹⁶ The price system of the *Reichsbahn* deteriorated their position in the competition with trucks insofar as the prices for cargo had been the highest for valuable finished goods being particularly suitable for trucks.¹⁷ As yet another point where the *Reichsbahn* had a disadvantage in the competition, the *Reichsbahn* mentioned in its memorandum the financial burdens of the reparations. As a conclusion, the *Reichsbahn* demanded that it should be allowed to push back the private road haulage sector and that the *Reichsbahn* should be given a monopoly for long-distance commercial goods traffic. Only local transport within a radius of 50 kilometres was to be left to private entrepreneurs.

As the *Reichsbahn* had to serve public interests (the common weal – *Gemeinwohl*), it had further disadvantages in the competition with trucks. The public interests were formulated as three obligations set up by the decree of the transport minister to operate the business of the *Reichsbahn* in a certain way. This decree dates back to 1908 and was modified in 1928:¹⁸

¹⁵ *Reichsbahn und Kraftwagenverkehr (Reichsbahn and motor traffic)*, edited by Deutschen Reichsbahngesellschaft, Berlin 1930, p. 24

¹⁶ *Op cit*, p. 64f.

¹⁷ *Op cit*, p. 65

¹⁸ The decree is the *Verordnung über die Einführung einer neuen Eisenbahn-Verkehrsordnung (Decree on the introduction of a new rail traffic rules)*, in: RG, 1928, II, p. 401ff. See also *Reichsbahn und Kraftwagenverkehr (Railway and motor traffic)*, herausgegeben von der Deutschen Reichsbahngesellschaft, Berlin 1930, p. 64. The decree of 23 December 1908 laid the foundation to distinguish between the following categories of cargo: baggage, dead bodies, livestock, express cargo, general cargo, see RG 1909, p. 93ff. Surprisingly, the category postal shippings are not mentioned, as well as not in the decree of 1928. In the ordinance for implementation decree (cf. note 45) to the long-distance freight transportation act 1935 the transport of furniture of removal

1. To offer services for cargo transport on all links, even if there is a weak demand (§53).
2. A price system (“tariffs”) applying nation-wide independence from local demand and local competition (§6).
3. To carry goods for each customer conforming to the general provisions. No customer may be excluded from service (§3).

In contrast, the commercial transport by trucks didn’t have to conform to these three obligations. The truck companies were free to choose the lines, the customers and the prices, according to market conditions.

To evaluate the arguments of the *Reichsbahn* in the memorandum, we should make an analysis of the *Reichsbahn*'s revenues from freight transport according to transport categories. The table below shows that in 1929, the category express, fast and less than wagon freight accounted for only 21.1% of the *Reichsbahn*'s freight traffic revenue in public transport.¹⁹

	Express freight	Fast and less than wagon freight	Wagon load according to regular tariffs	Wagon load according to low freight tariffs	Total
Transport volume in million. tons	0.7	20.4	136.6	275.1	432.8
Transport Output in million. tons*kilometres (tkm)	110	3807	19348	45067	68332
Average length of journey in km	157,.1	186.6	141.6	163.8	157.9
Revenue in million RM	59.9	623	1111.5	1498.8	3293.2
Revenue in % of total	1.8	18.9	33.8	45.5	
Revenue per tkm in 0.01RM	54.45	16.36	5.74	3.33	

Table 1: Gross receipts of the *Reichsbahn* in freight traffic in 1929. according to transport categories in metric tons

Due to the low weight of revenue from the category express, fast and less than wagon freight, the *Reichsbahn*'s argument that revenue from this category reduced the cost of transport for bulk goods is not very convincing. Or at least, the reduction cannot have been very significant.

If one considers the transport volume of the *Reichsbahn*, one can regard a weak impact of the competition with the truck. The following table shows the development of the various categories of cargo in the years 1925 till 1931.

firms is introduced as a new category (Ordinance for Implementation to §1) and also the transport of postal shippings is mentioned (Ordinance for Implementation to §2).

¹⁹ Statistisches Jahrbuch für das Deutsche Reich 1933 (*Statistical Yearbook of the German Reich*), p. 163

Year	1925	1926	1927	1928	1929	1930	1931
Express, fast and less than wagon freight in million. tons	19.7	19.2	22.92	22.68	21.12	18.36	15.72
Increase in %		-2.5	19.4	-1.0	-6.9	-13.1	-14.4
Wagon load freight in million tons	356.00	370.10	413.68	409.56	414.84	336.00	270.36
Increase in %		4.0	11.8	-1.0	1.3	-19.0	-19.5

Table 2: Cargo transport of the *Reichsbahn* in metric tons²⁰

In the category express, fast and less than wagon freight, the finished and semi-finished goods of high value are the ones which are amenable to truck transport. In the wagon freight category, there are commodities (bulk goods) of the agrarian sector and mainly of coal and steel. Therefore, the transported volume of this category can be regarded as an indicator of the economic activity. As well, one can identify the recovery of the economy from 1925 to 1929 and then the descent into the world-wide economic crisis. Until 1928 the growth rates of the category express, fast and less than wagon freight are similar to the growth rates of the category wagon load. But in 1929 we regard a decrease of 6.9% whereas the category wagon load increased by 1.3%. This decrease could be interpreted as the shift of cargo to the truck. But there is a lack of statistical data of truck transport in the 1920s, so that this thesis cannot be backed up further.

The price system of the *Reichsbahn* was very confusing and did not fit at all the requirements of modern concepts of marketing and management. There were an extremely great number of various price categories, depending on the kind of goods, the quantity and the distance of transport resulting to a great extent in lack of transparency for the customers as well as transparency for management. The dependence on the kind of good meant that the more valuable the good, the higher the price was. This policy gave a strong incentive for shippers to move from rail to truck transport, whereby under the conditions of competition the prices were tied to the transport costs and not to the value of the cargo.

As a reaction to competition with trucks, the *Reichsbahn* reduced the prices in 1929 for special plants and for 170 categories of goods to the lower level of the truck companies²¹ and

²⁰Statistical Yearbooks of the Reich 1928, p. 150, p.156, 1933, p. 164

²¹ Die Deutsche *Reichsbahn* im Jahre 1929 – ein Rückblick (*The German Reichsbahn in the year 1929 – a retrospective*), in: Die *Reichsbahn*, 6. Jahrgang, Heft 1, 1930, S. 15, see also die Denkschrift des Studienausschusses des Deutschen Industrie- und Handelstages: Eisenbahn und Kraftwagen *Memorandum of the Study Committee of the German Chambers of commerce conference*), Berlin 1930, S. 58

subsidized the transport prices (“Rollgeld”) for the local cargo transport from the shipper to the railway station and from the railway station to the destination of the shipment.²²

In contrast to the second obligation mentioned above, the prices did not really apply uniformly to all customers. Instead, there were numerous exemptions for special customers. Especially for customers in East Prussia – being separated from the Reich by a Polish land strip since 1919 – there were reduced prices for long-distance transports to support local industry²³ and farmers. Table 1 above demonstrates that in 1929, the transport volume (measured in tons) accounted for an exemption price which was double the volume accounted for the regular price. An additional characteristic of the price system could be seen in the lack of its stability concerning the interests of private companies which need stable conditions for planning and deciding. So in 1929, for example, new exemption prices were introduced 19 times.²⁴

One should notice that the arguments of the *Reichsbahn* against trucks refer to trucks of **cargo transport companies** (commercial truck transport) but not to the transport conducted by trucks owned by producing or trading companies to ship goods to their customers or outlets or to procure goods on their own account (**private carriers**). This kind of transport belonged to the internal processes of the companies and occurred in transport between

- a source of raw material and a plant as procurement transport
- a plant and its customers shipping semi-finished or finished goods
- a wholesaler and shops of retail trade shipping merchandise
- a central warehouse of a grocery chain and its outlets to provide the outlets with merchandise.

Private carriers played an important role in the distribution systems of the economy. The customers could be served quickly, in a flexible way and according to market signals. Especially in the distribution of fresh grocery goods, e.g. milk and vegetables,²⁵ private carriers were used to a wide extent already at the end of the 1920s.²⁶ Moreover, there was a

²² *Reichsbahn und Kraftwagenverkehr (Reichsbahn and motor vehicle transport)*, herausgegeben von der Deutschen Reichsbahngesellschaft, Berlin 1930, S.78

²³ The § 22 concerning the tariffs in the act of 30 April 1920 to unite the German state railways demanded that the railway should bear in mind the needs of traffic, especially the supply of raw material, in: RG 1920, I, p. 773-790

²⁴ Die deutsche *Reichsbahn* im Jahre 1929 (*The German Reichsbahn in 1929*), in: *Die Reichsbahn*, Vol. 6, 1930, p. 14f

²⁵ W. Linden: *Der Werkverkehr auf Lastkraftwagen (Private carrier's transport by truck)*, Berlin 1936, p. 38-41

²⁶ See the article: *Güterverkehr auf den Berliner Ausfallstrassen (Freight transport on Berlin's arterial roads)*, in: *Die Autobahn*, Heft 11, 1934, S.510, and Mellerowicz, op. cit.

special incentive to use private carriers. They were considered an instrument of marketing because they established a close and stable relationship between the shipping company and the customer. To underline this relationship, the trucks were marked with company logos whereas trucks of commercial transport companies could not communicate with the shipping company. Furthermore, if the trucks delivered to the customers regularly, the drivers were seen as ambassadors of the shipping company, developing a personal relationship with the customer and - as a second function - playing the role of an advisor for difficult technical questions concerning the cargo.

For this advisory function, the literature on traffic regulation reports on a company carrying out its distribution of goods with its own drivers. The company sold fertilizers and pesticides to small farm enterprises and advertised that its drivers were also trained farmers. The company applied in 1974 before the supreme court of constitution for more freedom of trade.²⁷

It is surprising that the *Reichsbahn* in its memorandum did not oppose the private carriers, although these transports had, according to the study of Mellerowicz, double the extent of transports of commercial transport companies.²⁸ In its memorandum, the *Reichsbahn* had to admit that the private carriers were of great value to the economy and that powerful, leading companies were using it. In this situation, the *Reichsbahn* could not fight against these companies.²⁹ But on the contrary, the commercial transport companies had been weak, consisting mainly of a one-man company of a self-employed truck driver. These companies had a very small capital endowment and bought their trucks on an instalment scheme. These entrepreneurs, who can be regarded as pioneers of the transport industry, were dismissed by the *Reichsbahn* as “nine days’ wonder” in its memorandum.³⁰ This structure of the truck transport trade shows a very low barrier of market entrance and gave rise to the theorem of **ruinous competition** in German transportation economics (see below).

²⁷ Supreme Court of Constitution 17 July 1974, in: Decisions of the Supreme Court of Constitution, Vol. 38, Tübingen, 1975, p. 69

²⁸ Mellerowicz, op. cit.. The data from table 5 (below) show that after 1960 the commercial carriers had more freight than private carriers.

²⁹ *Reichsbahn* und Kraftwagenverkehr, op. cit. , p. 85s. In its decision in 1975 against applicants as entrepreneurs in the transport trades, the Supreme Court of Constitution also used the argument that one only can restrict commercial transport but not private carriers, in: Decisions of the Supreme Court of Constitution, Vol. 40, 1976, p. 229

³⁰ op. cit. p.62

In March 1930, the *Deutsche Industrie- und Handelstag (DIHT)* (German Council of Industry and Commerce) presented the memorandum "*Eisenbahn und Kraftwagen*," (Railway and Car) that pointed out the many advantages of road haulage transport over rail transport:³¹

- Shorter door-to-door times
- Easier cargo handling
- Permanent readiness with no dependency on timetables
- Lower transport costs

In spite of these demonstrated advantages, the council surprisingly reached the conclusion of the *Reichsbahn* that competition between heavy trucks and the *Reichsbahn* should be restricted and to this end, the council proposed the imposition of a special levy on long-haul trucking.³² This study by the *Deutsche Industrie- und Handelstag*, which one might have expected to promote motorization, indicates the comparatively weak position of the German automobile industry in comparison with other economic sectors. If one examines the employment figures for the individual branches of industry in Germany from 1925, exhibited in table 3,³³ and puts them in categories that differentiate between railway-affine industries (primary production, the raw materials industry as well as the rail and postal services) and automobile-affine industries (branches of the manufactured goods industry of which it is assumed that they distribute their products to buyers in a large number of smaller units and that these dispatches have to be sent by express), it becomes clear that employment in the automobile-affine industries amounts to only half of that of rail-affine industries. This perhaps explains the weakness of the German automobile industry in its defensive struggle against the *Reichsbahn*.

³¹ Memorandum of the Study Committee "*Eisenbahn und Kraftwagen*" at the DIHT, Berlin 1930, p. 6-9

³² *Op cit*, p. 71

³³ *Beschäftigte des Deutschen Reiches 1925 nach Wirtschaftsgruppen (Employees of the German Reich in 1925 according to economic sectors)*, from: *Statistisches Jahrbuch für das deutsche Reich*, 1928, p. 23

No.	Business Sector	Number of employed and self-employed people	Railway affine		Automobile affine	
I.	Agriculture, market,, animal husbandry	9,603,376	1	9,603,376	0	0
II.	Forestry, fishery	159,050	1	159,050	0	0
III.	Mining, salt mining	847,356	1	847,356	0	0
IV.	Industrial rock and earth quarrying	686,782	1	686,782	0	0
V.	Iron and metal industry	580,358	1	580,358	0	0
VI.	Production of iron, steel and metal goods	1,000,833	1	1,000,833	0	0
VII.	Engine-building, apparatus engineering and vehicle construction	1,315,535	0	0	1	1,315,535
VIII.	Electrical industry, precision mechanics, optics	571,422	0	0	1	571,422
IX.	Chemical industry	352,059	1	352,059	0	0
X.	Textile industry	1,206,731	0	0	1	1,206,731
XI.	Paper industry and duplicating trade	536,302	0	0	0	0
XII.	Leather and linoleum industry	174,038	0	0	0	0
XIII.	Rubber and asbestos industry	68,823	0	0	1	68,823
XIV.	Timber and carved goods trade	966,105	0	0	0	0
XV.	Musical instruments and toy industry	109,939	0	0	1	109,939
XVI.	Food and luxury food industry	1,346,398	0	0	1	1,346,398
XVII.	Garment industry	1,590,278	0	0	1	1590278
XVIII.	Construction and related trades	1,707,681	0	0	0	0
XIX.	Water, gas, electricity industry and supply	178,403	0	0	0	0
XX.	Retail trade	2,970,692	0	0	0	0
XXI.	Insurance	112,050	0	0	0	0
XXII.	Transport	1,520,133	0	0	0	0
	Of which <i>Reichsbahn</i>	759,015	1	759,015	0	0
	Of which post and telegraph	346,488	1	346,488	0	0
XXIII.	Hotels, catering and bars	670,672	0	0	0	0
D.	Administration, professions etc.	1,502,379	0	0	0	0
E.	Health sector	588,788	0	0	0	0
F.	Domestic services	1,642,982	0	0	0	0
	Sum	33,114,668		14,335,317		6,209,126

Table 3: Employment figures in business sectors in Germany, 1925

In response to the DIHT memorandum, the *Reichsverband der Automobilindustrie e.V.* (Council of the Automobile Industry) drew up a paper of its own. It criticized that the *Reichsbahn* tariffs could not be justified in macro-economic terms. On the contrary, the railway's low freight rates represented gifts to individual plants. The memorandum rejected the railway's argument that the transport of express, fast and less than wagon freight produced a surplus. On the contrary, too, wagonload transport was the only sector that made a profit.

The *Reichsverband* demanded that railway tariffs be based on actual costs and called for an end to the practice of subsidising passenger and less than wagon freight, as well as all local transport with profits from wagonload transport, so that competition with trucks could be started on the basis of the actual costs.³⁴

The *Reichsbahn* memorandum on competition with motorized vehicles met with a lively response in the transport press. Numerous chambers of industry and commerce in particular warned that the introduction of a *Reichsbahn* monopoly for freight traffic would hinder economic development and technical progress.³⁵ Many reactions compared the development of motorized transport and the replacement of the railway with developments in the 19th century when railways supplanted horse-drawn transport. The roads over which all land transport had once passed had initially lost much of their importance in the 19th century with the development of the railway. But as a result of the motorization of the transport system, country roads gained a new and unforeseen importance. The commencement of eliminatory competition with the railways was seen as the natural consequence of technological progress.³⁶

In the world-wide depression of 1929 to 1933, the *Reichsbahn* succeeded in the struggle between rail and road. In September 1930, the *Reichsbahn*'s management board passed a resolution appealing to the transport minister to enact appropriate protective measures.³⁷ Chancellor Brüning reacted to the *Reichsbahn*'s demands and his Third Emergency Decree of 6 October 1931 made the licensing, pricing and routing of bus companies and trucking companies contingent upon the agreement of the *Reichsbahn*.³⁸ In §21 of the decree an

³⁴ Eisenbahn und Kraftwagen – Zur Denkschrift des Deutschen Industrie- und Handelstages (*Railway and motor vehicle – On the Memorandum of the German Chambers of commerce conference*), herausgegeben von Reichsverband der Automobilindustrie e. V., Berlin 1930, BA, NS/5/VI, Band 13804, Blatt 49-54

³⁵ "Auch die Autoindustrie gegen ein Güterverkehrsmonopol der *Reichsbahn*" (*Automobile industry also against freight transport monopoly of the Reichsbahn*), in: ADAC-Motorwelt, 1932, Heft 16, p. 2. The Deutsche Wirtschaftszeitung, the journal of the chambers, published resolutions from over 30 chambers of industry and commerce in 1932 protesting against a *Reichsbahn* monopoly for freight transport (Saxonian Archive for Economy, Leipzig).

³⁶ For example, ADAC-Motorwelt, 1932, Heft 19, p. 3 or Karl Busemann: Schiene und Landstrasse (*Railway and Road*), in: HAFRABA-Mitteilungsblatt, Heft 11, 1932, p. 4.

³⁷ See the 39th meeting of the board, in: *Die Reichsbahn*, 6. Jahrgang 1930, Heft 40, 1.10.1930, p. 1053. See also the speech of *Reichsbahn* president Dormmüller in the presence of industrial leaders: "Zur Lage der *Reichsbahn*" (*The situation of the Reichsbahn*), in: *Die Reichsbahn*, Vol. 6, 1930, p. 382-388

³⁸ Dritte Verordnung des Reichspräsidenten zur Sicherung von Wirtschaft und Finanzen und zur Bekämpfung politischer Ausschreitungen vom 6. Oktober 1931, Kapitel V, Überlandverkehr mit Kraftfahrzeugen (*Third decree of the Reich's president for the protection of economy and finance and for the abatement of political riots of 6 October 1931*), (*Overland Ordinance*), in: RG, I, 1931, Nr. 67, S. 558-577. Forerunners of this decree are: Kraftlinienverordnung (*Decree of motorized lines*) on 20 October 1928, RG, I, 1928, p. 380 and the act on lines

obligatory price system for truck companies was established, the so-called “Reichskraftwagentarif” (RKT, the Reich tariff for motor vehicles), which remained (with modifications) obligatory until 1994. But, although the RKT tied the prices of truck transport to the tariffs of the *Reichsbahn* as a lower bound, there remained an incentive for truck transport, because it was more flexible, quicker and operated directly from door-to-door.

The basis for the *Reichsbahn's* claim to special protection actually fell away with the conclusion of the reparations conference in Lausanne in July 1932, where agreement was reached to end German reparation payments. However, nobody could expect the *Reichsbahn* to be exposed to stronger competition from trucks in the middle of a global economic crisis.

operating with motor vehicles on 26 August 1925, RG, 1925, I, p. 319 and the decree concerning lines operating with motor vehicles on 24 January 1919, RG, 1919,p. 319

3. The Regulation in the Nazi Era

The regulation by the emergency decree failed to achieve the desired effect of ending road-rail rivalry because the regional authorities were unable to monitor trucking companies' compliance with the RKT.³⁹ The conflict between the *Reichsbahn* and the independent road haulage companies increased after the *Reichsbahn* purchased the Schenker transport company,⁴⁰ used the rail transport contract on 1 March 1932 to bind some 3,000 trucking companies and undercut the prices of the independent haulers.⁴¹ In winter 1933, the trucking companies made urgent appeals to Hitler protesting the pricing policies of the *Reichsbahn*.⁴² In response, Hitler summoned the Director General of the *Deutsche Reichsbahngesellschaft*, Julius Dormmüller, to the Chancellery on 16 March 1933 for a lecture about competition between the *Reichsbahn* and road haulage.⁴³ Dormmüller put forward the arguments contained in the *Reichsbahn* memorandum.⁴⁴ It made economic sense to use revenue from the transport of high quality goods to subsidize the transport of bulk goods by rail,⁴⁵ and thus eliminate price competition from independent road haulage companies that mostly transported high quality goods. Moreover, he argued, the provisions of the Rail Transport Ordinance compelled the *Reichsbahn* to transport all goods and treat them equally, which put the company at a disadvantage with independent trucking companies who could choose the lucrative contracts. Hitler opposed Dormmüller insofar as he said that the *Reichsbahn* would have to accept that the transport of high quality goods was increasingly being switched to heavy trucks as these permitted door-to-door transport. Promotion of truck traffic was also desirable in order to ensure that Germany had a sufficient number of vehicles in the event of

³⁹ Akten der Reichskanzlei, Regierung Hitler 1933-1945 (*Files of the Reichskanzlei, Hitler rule 1933 – 1945*), herausgegeben von H.G. Hockerts, Band II: 1934/35, bearbeitet von F. Hartmansgruber, München 1999, Meeting at the Transport Ministry about the draft of a law on long distance freight transport using motorised vehicles on 16 April 1935, p. 532.

⁴⁰ G. Kock: Der Kampf um das Monopol – Die Deutsche Reichsbahn-Gesellschaft und der Schenker-Vertrag 1931 (*The struggle for Monopoly – The Reichsbahn and the Schenker Treaty*), in: W. Pyta and Ludwig Richter (Ed.): Gestaltungskraft des Politischen, Berlin 1998, 139-172

⁴¹ Von Beck: Der Bahnspeditionsvertrag und das Abkommen mit den Auftragsspediteuren (*The rail conveyance contract and the agreement with the carriers*), in: Die Reichsbahn, 1932, p. 1142-1147.

⁴² The information was shown by Minuth, who edited the documents, as footnotes to the documents 64 and 95, in: Akten der Reichskanzlei, Regierung Hitler 1933-1938, edited by Konrad Repgen, Teil I: 1933/34, Band 1, edited by Karl-Heinz Minuth, p. 225f, 329f. In a letter to the undersecretary at the Chancellery dated 11.9.1933 Ahlemann, honorary chairman of the Verein Deutscher Spediteure, member of the nazi party and a member of the Prussian Landtag said attempts had been made to stop the discussion about Schenker with threats that "whoever fights against Schenker would be sent to a concentration camp", op cit, p.330.

⁴³ Annotation by Oberregierungsrat Willuhn about a lecture given by the General Director of the *Deutsche Reichsbahngesellschaft* on the question of competition between the *Reichsbahn* and motorized traffic on 16 March 1933, op cit, p. 225-231.

⁴⁴ Reichsbahn und Kraftwagenverkehr (*Reichsbahn and motor traffic*) Reichsbahngesellschaft, Berlin 1930

⁴⁵ Op cit, p. 64

their being needed for national defence and to permit technical progress in engine construction. The *Reichsbahn* could therefore not be allowed to let road transport wither. Hitler initially demanded that the *Reichsbahn* undertake freight transport with trucks as a monopoly itself,⁴⁶ thus taking up the idea of a large centralized transport company of the kind the *Reichsbahn* had proposed in its memorandum of 1930. However, he focused more on *Reichsbahn* operations with its own trucks that would replace unprofitable railway lines – a development which had been known as “self motorization” of the railway. Dorpmüller followed the request of Hitler and made a program for motorization. According to this program, in 1933, he ordered 1863 trucks from the auto industry. In public, some advertisements were made with posters carrying the slogan “The Railway on tracks and roads!”⁴⁷

Considering that Hitler was actually an advocate of competition, one might wonder why he was so concerned with protecting the *Reichsbahn* from competition with the road haulage industry. One indication is that he wished to keep a technical and financially well equipped *Reichsbahn* as a logistical instrument for the war effort and this is evident in the speech he made on 29 May 1933 to leading industrialists, where, in the context of a discussion about military mobilization, he explained that if the *Reichsbahn* were not protected, it would “be useless for other tasks that cannot be carried out by motor vehicles.”⁴⁸ These statements can be interpreted to mean that he believed a dense network of railways for rail transport which he planned to start the war. Replacing railway transport based on the domestic fuel source coal, with motor vehicles was, from a military perspective, precarious in that the necessary materials rubber and petrol were extremely scarce in Germany and in Hitler's plans had to be reserved for military offensives.⁴⁹ These considerations might also indicate that Hitler wished the *Reichsbahn* to undertake tasks that he did not believe could be performed by motor vehicles. If one assumes that the important role of the *Reichsbahn* for logistics in the planned war had been recognized, then one had to notice on the other hand, that investment in railway maintenance and improvement did not take place until 1939, as Kopper has shown in his

⁴⁶ Annotation by Oberregierungsrat Willuhn about a lecture by the General Director of the Deutsche Reichsbahngesellschaft on the question of competition between the *Reichsbahn* and motorized traffic on 16 March 1933, Akten der Reichskanzlei, Regierung Hitler 1933-1938, published by Konrad Repgen, Teil I, op cit, p. 229.

⁴⁷ see Rudolf Meyer: Die Reichsbahn auf Schiene und Strasse! (*The Railway on tracks and roads!*), in: Die Reichsbahn, 10. Jahrgang, 1934, Heft 25, S. 607-609. The motorized operations of the *Reichsbahn* is described in detail by Mierzejewski, Alfred: The Most Valuable Asset of the Reich – A History of the German National Railway, Vol. 2, Chapel Hill, 2000, chapter 2

⁴⁸ Akten der Reichskanzlei, Regierung Hitler 1933-1938, op. cit., p. 511

⁴⁹ Henning, op. cit.

study.⁵⁰ In the transportation sector, nearly all the investment had been made in the motorway and road network, demonstrating that the Nazis were ill-prepared for war in terms of an adequate railway system.

The regulation of commercial truck transport was extended by the Nazi regime through law on long-distance motor vehicle freight transportation in 1935⁵¹ (in the following: freight transportation act) showing many elements of how the Nazis exerted political pressure. However, the law on freight transport enacted in 1935 did not create a *Reichsbahn* monopoly because Hitler feared that competition would later be completely eliminated.⁵² Totally misleading Klenke sees in the freight transportation act a success in regulation.⁵³

Instead, independent trucking companies had to apply for compulsory membership in the "*Reichs-Kraftwagen-Betriebsverband*" (RKB - Council of Truck Operators), which in consultation with the *Reichsbahn* laid down the RKT-tariffs for transport which were then approved by the Ministry of Transport (§13). The intention behind this supervision by the Ministry of Transport was to prevent the tariffs from being undercut. Figure 1 shows the structure of RKT for the tariff classes A-D.⁵⁴

⁵⁰ C. Kopper: Modernität oder Scheinmodernität nationalsozialistischer Herrschaft – Das Beispiel der Verkehrspolitik (*Modernity or pseudo-modernity of national social governance – The example of traffic policy*), in: Christian Jansen, Lutz Niethammer und Bernd Weisbrod (Ed.): Von der Aufgabe der Freiheit, Festschrift für Hans Mommsen (*Of the abandonment of freedom*), Berlin 1995, p. 408-411

⁵¹ Law on Long Distance Goods Transport with Motorized Vehicles of 26 June 1935 and the Ordinance for Implementation decree of 27 March 1936

⁵² F. Hartmansgruber: Einleitung zu Akten der Reichskanzlei (*Introduction to the files of the Reichskanzlei*), Regierung Hitler 1933-1945, published by H.G. Hockerts, Band II: 1934/35, edited by F. Hartmansgruber, Munich 1999, p. LX, and Document 143: Meeting at the Transport Ministry about the draft of a law on long - distance freight transport using motorized vehicles on 16 April 1935, op cit, p. 531-535, as well as the official grounds for the law set out by the Minister of Transport in: Die Strasse, Heft 15, 1935, p. 565.

⁵³ Klenke, Dietmar: Bundesdeutsche Verkehrspolitik und Motorisierung: konflikträchtige Weichenstellungen in den Jahren des Wiederaufstiegs, Stuttgart, 1993 (Zeitschrift für Unternehmensgeschichte, Beiheft 79), S. 22

⁵⁴ RKB Bericht (*RKB Report*), Jena 1938, p. 55

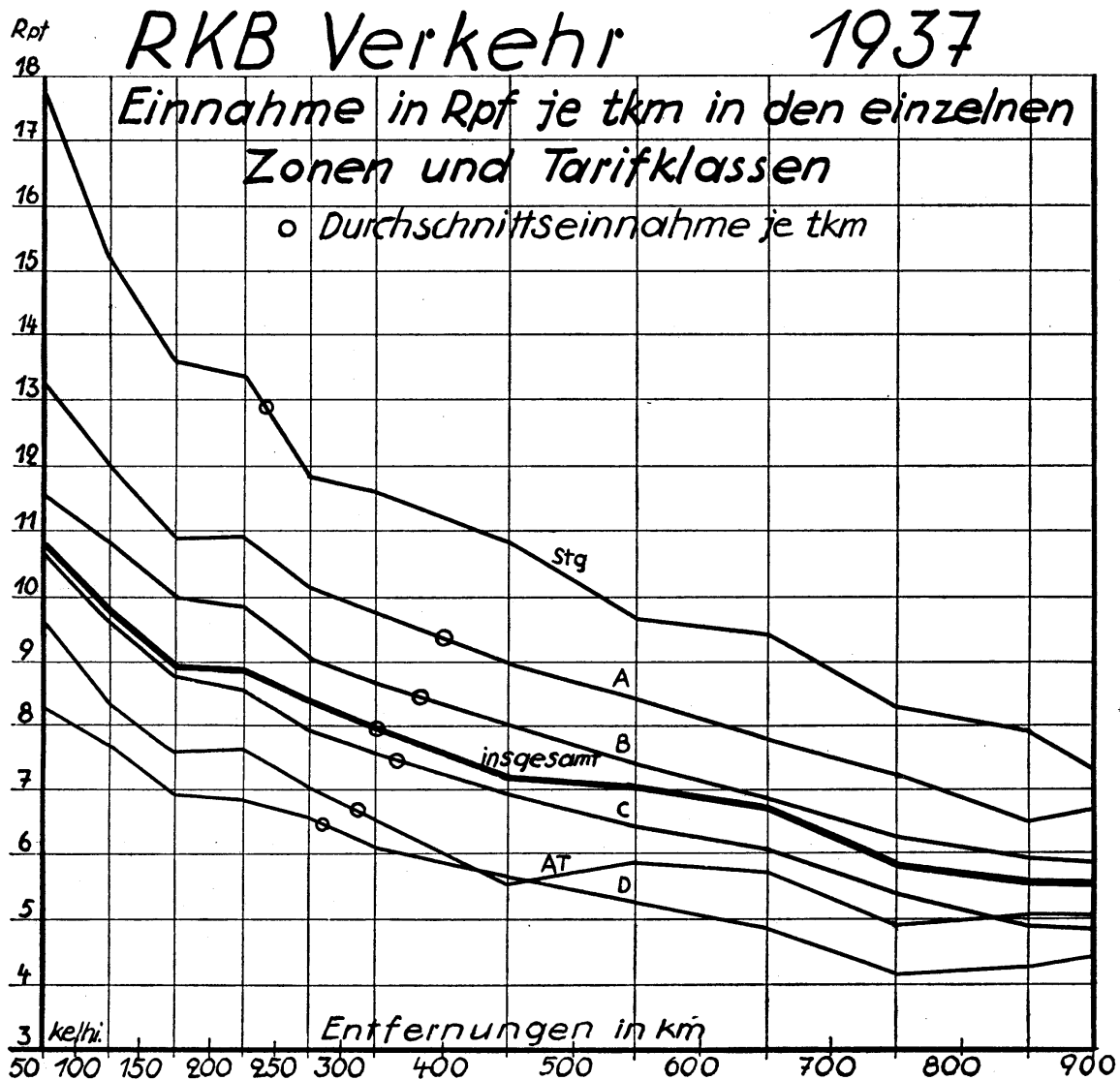


Figure 1: Structure of RKT: Revenues in 0.01 RM = Rpf versus distance

Long-distance trucking transport companies were relieved of the elementary entrepreneurial functions of issuing invoices and handling payments, which were instead carried out by the *Reichs-Kraftwagen-Betriebsverband*.⁵⁵ This made it significantly harder to evade the set freight rate. The duties of the council had included controlling its members (§10) and laying down the transport tariffs in agreement with the *Reichsbahn* (§13). A further reduction of the freedom of trade is made in §8: The entrepreneur did not have the right to conduct any business other than long-distance transport. The transportation act of 1935 demanded, besides tariff regulation, a license for the trucking company applied for at the regional authorities

⁵⁵ §15 of Law on Long Distance Goods Transport with Motorised Vehicles of 26 June 1935, in: RG, I, 1935, p. 788-793, as well as Ordinance for Implementation, in: RG, 1936, I, p. 320-326. On the prior history of this law see note 5 of the editor Minuth on document No. 64, in: Akten der Reichskanzlei, Regierung Hitler 1933-1938, op cit, p. 320f. Until the enactment of this law the Brüning government's Overland Ordinance remained in force.

(§5). This license could be refused if there was no public interest for truck transport (§7), which meant if the interests of the *Reichsbahn* would have been concerned. With this license policy, the number of trucks for commercial transports had been heavily reduced. The number of trucks employed in private sector long-distance haulage actually fell from its highest level of 13,400 in 1933 to 11,400 in 1937.⁵⁶ The RKB reports a further reduction on 10,600 trucks in June 1938,⁵⁷ thus falling even below the figure of 11,500 in 1932, notwithstanding the greater demand for transport services caused by the rearmament and the fortifications works at the border to France.

The RKB organized the transport business in 8 regions of Germany. In every region there was one manager responsible for the execution of the freight transportation act and a grid of freight exchange offices, not being more remote than 50 km from customers, had been established. In the freight exchange offices, the supply and demand of transport services had been balanced.⁵⁸ The RKB took part in the organization of the fortifications works at the border to France which had been built with the strong support of trucks.

The aim of the freight transportation act to provide the rural areas with transport services of trucks could not be achieved because the RKT restricted the freight to goods of train tariff classes A-D, but agrarian products were classed with tariffs E-G. To require freight, the entrepreneurs had to serve the main destinations, already served by the train, so that the competition with the train became more intensive – against the aim of the freight transportation act.⁵⁹ And at the same time there had not been enough cargo for the self-employed tramp drivers being troubled.

The years 1937 and 1938 saw a heavy crisis in the transport sector of Germany. The demand for transport capacity rapidly grew by the rearmament and by the fortifications works at the border to France. As a consequence, the *Reichsbahn* could not sufficiently provide the basic supply of coal for industry.⁶⁰ In February 1938 Dorpmüller, the transport minister since 1937, reacted to the transport crisis and released a decree to support the long distance traffic with

⁵⁶ W. Scholz: Die Entwicklung des Kraftfahrzeugbestandes im gewerblichen Güterfernverkehr (*The Truck in commercial Transport*), in: Die Strasse, Heft 4, 1938, p. 106-108, here p. 106

⁵⁷ RKB Bericht (*RKB Report*), Jena 1938, p. 32

⁵⁸ RKB Bericht (*RKB Report*), Jena 1938, p. 23f

⁵⁹ op.cit., p. 40

⁶⁰ See Rohde op.cit., p. 281

trucks.⁶¹ With this decree the transport minister extended the RKT to all tariff classes so as to enable employment for the tramp trucks and cancelled §8 of the freight transportation act which had stopped the economic activity of an entrepreneur not working in the commercial truck transport trade. But, the analysis of Rohde has shown that the decree of February 1938 served more the interests of the *Reichsbahn* than those of the trucking companies and caused Todt, the head of the fortifications works at the border to France, to intervene.⁶²

The pressure on Dormmüller grew to release more licenses for heavy trucks to overcome the transport crisis, as Rohde has shown in her detailed analysis.⁶³ After a severe letter from Bormann, the secretary of Hitler, to Dormmüller in May 1938⁶⁴, Dormmüller had to cancel the ban on releasing licenses and to permit short-distance entrepreneurs to support the works on the fortification program at the border to France.⁶⁵ In September 1938, an anonymous article in Göring's journal "Der Vierjahresplan" (*The Four-Year Plan*) came out demanding the fundamental acceptance of truck transport in the economy. The freight transportation act would not accomplish its aim to have fair competition between railway and truck (see below) but would lead to a barrier in the development of truck transport. At the RKB there would wait some 5000 applications for a license.⁶⁶ In October 1938 the president of RKB, Scholz, had to resign and Dormmüller had to appoint the former general of the tank troops, Oswald Lutz, who pushed ahead the communication between the armed forces and the RKB and the transport management of the fortifications works at the border to France.⁶⁷

With regard to *Autobahn* construction, transport policy was highly contradictory. On the one hand, a network of 3,000 km of high-speed roads ("Autobahn") was created in the years before 1939.⁶⁸ On the other, truck transport by private road haulage companies was drastically

⁶¹ Order No K2.566 issued by the transport minister on 2 February 1938 on the emergency programme to remedy the desperate situation in the long-distance transport industry, see *Reichsverkehrsblatt* (Bulletin of the transport minister), Edition B, on 2 February 1938, p. 27 and in: *Die Strasse*, Heft 5, 1938, p. 161.

⁶² See Rohde, op.cit., p. 277-280. In a letter to Dormmüller on 22 February 1938 Todt complained of the continued subsidisation of cartage and the *Reichsbahn's* purchase of capacity on the market for commercial long distance transport in the Order No K2.566, see BA, R5, vol. 8125, page 84-89

⁶³ See Rohde op.cit., p. 274-283

⁶⁴ Letter of 19 May 1938, in: BA R5, 8126. Bormann writes that Hitler expects 60,000 trucks in the near future.

⁶⁵ Order K2.6331 *Reichsverkehrsblatt* (Bulletin of the transport minister), Edition B, on 22 June 1938, p. 133 and order K 2.5156 on 15 June 1938, *ibid.*, p. 132

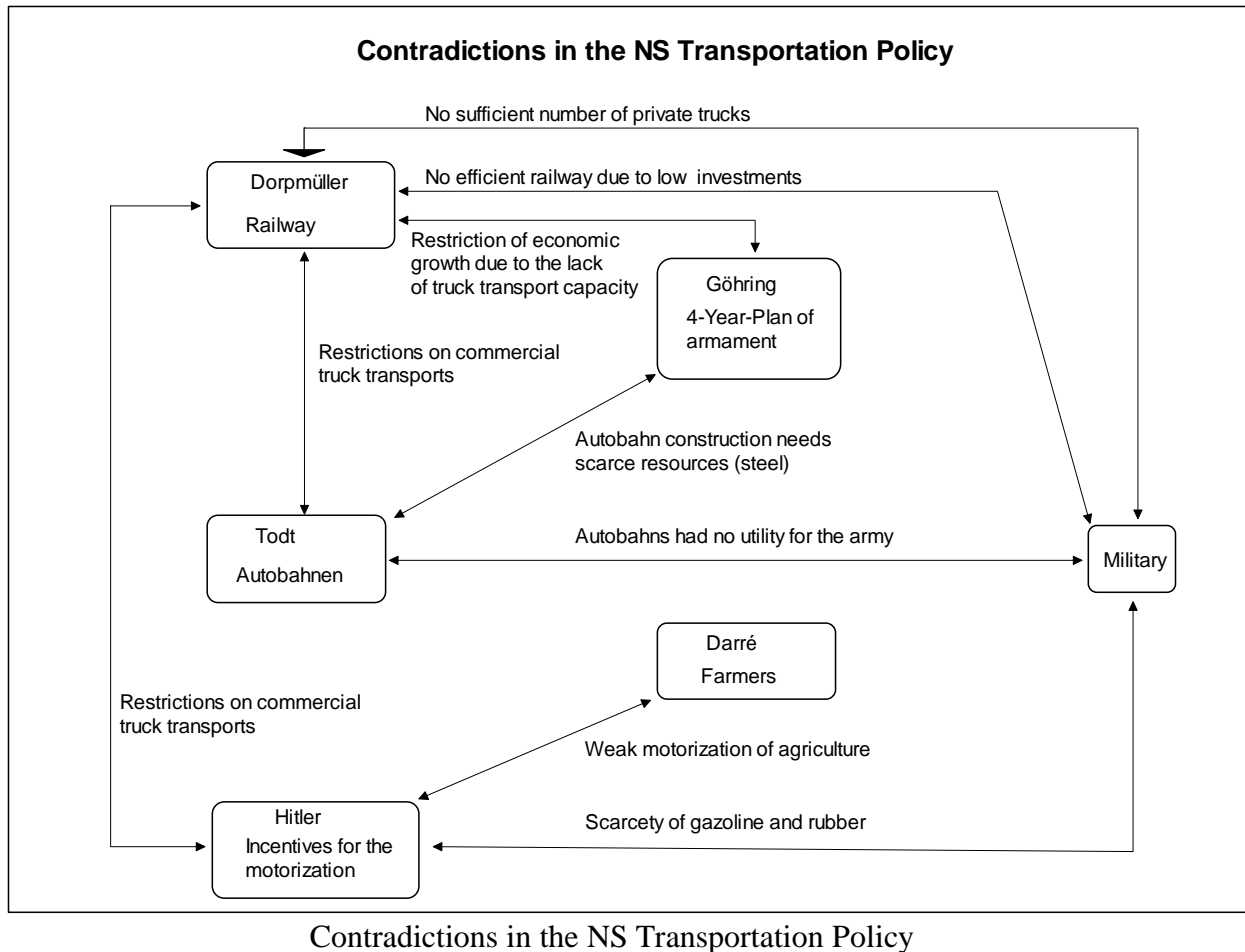
⁶⁶ *Der Vierjahresplan*, 1938, Heft 9, p. 547s. Göring was the head of the Four-Year-Plan-Project of armament.

⁶⁷ *Düsseldorfer Nachrichten* (*Düsseldorf News*) on 11 October 1938, in: BA, R5, 8126 and protocol of the conference at RKB of 27 October 1938, in: BA, R5, 8126, cf. footnote 52 above.

⁶⁸ For further research on the German *Autobahn* project see my paper:

Roads without Cars - The HAFRABA Association and the *Autobahn* Project 1933-1943 in Germany, Working Paper in the History of Mobility 1/2002, in the internet resource

curtailed.⁶⁹ As well, the strategies in transport policy did not correspond to the goal of armament. There were neither incentives for the diffusion of trucks at private enterprises so that the army could requisition trucks nor did the *Autobahn* serve the deployment of troops. The following figure summarizes the contradictions of the Nazi transportation policy.



It is interesting because it shows the strong position of the *Reichsbahn* and the Nazis' insistence on a policy against the truck, that Dormmüller simply could ignore to a wide extent the severe requests to release more licenses for heavy trucks to overcome the transport crisis. These requests came from:⁷⁰

- Todt, the central manager of the fortifications works at the French border and at the same time responsible for the road network in Germany
- The military command increased the pressure to receive more trucks for the war.

http://www.ibwl.uni-kassel.de/vahrenkamp/history_mobility/history_mobility.htm, and in *Zeitschrift des Vereins für Hessische Landesgeschichte und Landeskunde*, vol. 109, 2004, Marburg, p. 225-266

⁶⁹ See also Oswald Lutz: 3000 Kilometer Reichsautobahn für den gewerblichen Kraftverkehr, in: *Die Strasse*, 1938, issue 24, p. 772

⁷⁰ See Rohde, op.cit., p. 277-280

- Bormann, the secretary of Hitler in his letter of May 1938.

The freight transportation act of 1935 laid the foundations of several differentiations in the legal frame of transport and the public and scientific debate on transportation in Germany remained valid till 1998. First, there was the long-distance transport of more than 50 km and the short-distance transport of less than 50 km (§1). The location of the trucks had to be registered at the local authorities and to be exhibited on nameplates on the trucks together with labels “short-distance” or “long-distance” (§§9-11 of Ordinance for Implementation decree). With this means, the police could control the radius of action of short-distance entrepreneurs. Second, there was the distinction between commercial transport with trucks and that with private carriers. For the latter category the law did not apply (§2) because Hitler did not want strict regulations in the economy outside the transport sector. Third, one can find the distinction of transports between destinations at home and transports between destinations at home and abroad. This distinction has been a rich source for special cases in regulating short-distance transports at the border during the following decades.

The freight transportation act was introduced by a phrase that has been used by many who wanted to justify the regulation in the 50 years following. Disguising the true aim of the law to protect the railway, the phrase says that the aim of the act would be to “promise fair competition in performance between railway and motor vehicles”. This balance of opposed interests in the transport economy was repeated in §8 of the general railway act of the Federal Republic of Germany in 1951⁷¹ and in §7 of the transportation act of 1952 (see below). In addition, numerous PhD-theses have been written on the socially desirable division of functions between rail and motor vehicles (cf. table 6). Even in the German scholars of history the view of the railway were perceived as starting point of analysis.⁷² During this development, an interesting shift in semantics took place. Not only the railway appeared as an institution of common good which has to be protected. But, as well, the regulated order of the different transport branches had to be protected. In 1960, the transport minister in the Federal Republic of Germany raised the regulated order of the different transport branches to the

⁷¹ BG, II, 1951, p. 60

⁷² See the habilitation thesis of Klenke, Dietmar: Bundesdeutsche Verkehrspolitik und Motorisierung: konfliktträchtige Weichenstellungen in den Jahren des Wiederaufstiegs, Stuttgart, 1993 (Zeitschrift für Unternehmensgeschichte, Beiheft 79)

highest level of its constitution: It should be an **outstandingly important value of society**.⁷³ Only if there were danger for this value, the restriction of freedoms of the individual guaranteed by the constitution would be justified.

One can understand the freight transportation act in the broader context of the Nazi economic and social policies aimed at regulating nearly all branches of economic activities - not only large industries in the Four-Year-Plan but also the small business sector - and to form a corporate society with many chambers, licenses etc, as e.g. for shop-owners, lawyers, craftsmen and for engineers, to focus the economic activities on the production of arms.⁷⁴ This policy was partly motivated by the goal to exclude Jews from economic activities.

The protection of the railway conforms to the aggressive foreign policy of the Nazi regime insofar as it wanted to protect the railway and to possess a strong instrument for logistics in the planned war. As in World War I, the railway was the most important means of transportation.⁷⁵ The *Reichsbahn* as a private organization terminated in 1937 and was then integrated into the administration of the transport minister guaranteeing a tight leadership for the war. But the Nazi transport policy was not coherent. Investment for maintenance and improvement of the railway did not take place until 1939, as Kopper has shown in his study.⁷⁶ So the war had started with an insufficiently prepared railway.

Together with the freight transportation act the transport minister established its own scientific **advisory board** to give the regulation of the transport industry a scientific

⁷³ Statement in the case No. 18 of the Supreme Court of Constitution 8 June 1960, in: Decisions of the Supreme Court of Constitution, Vol. 11, Tübingen, 1961, p. 175

⁷⁴ Herbst, Ludolf: *Der Totale Krieg und die Ordnung der Wirtschaft*, Stuttgart 1985, S. 153-160. Heinrich Winkler: *Der entbehrliche Stand – Zur Mittelstandspolitik des „Dritten Reiches“*, in: Derselbe: *Liberalismus und Antiliberalismus: Studien zur politischen Sozialgeschichte des 19. und 20. Jahrhunderts*, Göttingen, 1979, S. 110-144. Zur Benachteiligung der Fahrlehrer siehe Dorothee Hochstetter, *Motorisierung und Volksgemeinschaft*, München 2005, S. 355-372. Zu den Reisebüros siehe Wolfgang König: *Nazi Visions of Mass Tourism*, in: Laurent Tissot (Hersg.): *Development of a Tourist Industry*, Neuchatel 2003, S. 261-268 und Wolfgang König: *Volkswagen, Volksempfänger, Volksgemeinschaft – Vom Scheitern der nationalsozialistischen Konsumgesellschaft*, Paderborn 2004.

⁷⁵ Gottwald, A.: *Deutsche Eisenbahnen im zweiten Weltkrieg (German railways in World War II)*, Stuttgart 1983, and Klaus Hildebrand: *Die Deutsche Reichsbahn in der nationalsozialistischen Diktatur 1933-1945 (The railway 1933-1945)*, in: Lothar Gall, Manfred Pohl (Ed.): *Die Eisenbahnen in Deutschland (The railways in Germany)*, München 1999, p.165-250

⁷⁶ C. Kopper: *Modernität oder Scheinmodernität nationalsozialistischer Herrschaft – Das Beispiel der Verkehrspolitik (Modernity or pseudo-modernity of national social governance – The example of traffic policy)*, in: Christian Jansen, Lutz Niethammer und Bernd Weisbrod (Ed.): *Von der Aufgabe der Freiheit, Festschrift für Hans Mommsen (Of the abandonment of freedom)*, Berlin 1995, p. 408-411

legitimacy.⁷⁷ (The list of members and of publications of the board is shown in table 7 below). Even Professor Wagemann, head of the research unit on business cycles in Berlin and one of the few scientists in German economics who conducted research with empirical methods, justified the restriction of trucks.⁷⁸ Several traffic research units at the universities of Cologne, Halle, Koenigsberg and Leipzig⁷⁹ received financial support. Although consisting mainly of jurists and engineers with limited economic knowledge, the board developed a special German doctrine of the peculiarities of transportation economics, as they are:⁸⁰

- The transport sector is a basic function. It therefore serves all branches of society and needs special protection to be able to conduct its service.
- Between two destinations the stream of traffic is unbalanced in general leading to a great number of retour drivings without load.
- A great share of fixed costs is independent of capacity usage in the cost structure.
- Unregulated competition would be ruinous.
- A low elasticity of demand regarding the price.
- Capacity has to meet the peak demand.
- Great differences in the size of business in the transportation trade.
- As a “production” of a service there is no opportunity to produce transportation in advance as a stockpile.
- A great share of public enterprises in the transportation trade.

One can argue that many characteristics of transportation mentioned above can be found in other industries as well. So there has been a debate as to whether the laws of the market mechanism can be applied to the transport sector. But we will not further discuss these peculiarities of transportation economics, but rather, we will concentrate on the term of ruinous competition.

The argument of ruinous competition (cut-throat-competition) has been repeated several times since 1935 for the next 50 years. It is very suggestive and could be used by politicians to cause fear of free competition and of a loss of protection of the railway.⁸¹ The concept of ruinous competition implies three interpretations:

⁷⁷ Report of the Advisory Board for 1937, BA, R5, 9286

⁷⁸ Speech at the conference on traffic science in Berlin, 23 March 1936, in: BA, R5, 8104

⁷⁹ Report of the Advisory Board for 1937, BA, R5, 9286

⁸⁰ Laaser, Claus-Dieter: Die ordnungspolitische Sonderstellung des Verkehrswesens bei der Liberalisierung des westdeutschen Wirtschaft nach 1945 (*The Exemption of traffic at the liberalisation of westgerman economy*), Institut für Weltwirtschaft, Kiel, Arbeitspapier Nr. 292, 1987, p. 48, Voigt, Fritz: Verkehr (*Traffic*), Vol. I/1, Berlin 1965, p. 20s

⁸¹ Willeke, R.: “Ruinöse Konkurrenz” als verkehrspolitisches Argument (*Ruinous competition as a traffic-concerned political argument*), in: Ordo, Vol. 28, 1977, p. 155s. In its decision 1960 the German Supreme Court criticized the application of the concept of ruinous competition without specification of the context, see note 65, op. cit, p. 185

- 1) The competition of a monopolist or a cartel against newcomers or outsiders. The monopolist can reduce its prices for a period of time so that the newcomers are driven to ruin. The term cut-throat-competition emerged together with the powerful cartels at the turn of the 19th century.
- 2) The competition of small firms in a market with low barriers of entry, as in the transport trade using cars and trucks for transports. The market would become overcrowded and the agents would reduce their prices to receive an order. Finally, this process would lead to the ruin of many agents and to a disorder in the supply of the economy. This development had been observed in the truck business. In the 1920s, the new truck technology as a means of transport was accepted in civilian life. This was achieved due to the reaction of the road haulage companies, as pioneers of the truck transport business, to the new market opportunities offered by the truck.⁸² Mostly, they just had one single truck which they bought from a truck producer in installments.⁸³ Since truck traffic was not yet regulated by law, and liability insurance was not yet obligatory, haulage companies were also considered gamblers that carried out “wild traffic”. Both the Chamber of Industry and Commerce and the umbrella organization of forwarding companies asked for measures to formulate minimum standards of quality and security, and to stabilize the truck -carrying trade. The financially weak members were unable to cushion the cyclical fluctuations of the transport demand, leading to ruinous competition.⁸⁴ Around 1930, the objective demand for state regulations resulting from the structure of the truck transport sector could be observed all over Europe.⁸⁵
- 3) The competition of the railway with small firms in the transport trade using cars and trucks for transports. These firms could serve the lucrative orders and links with low prices because they do not have to cover the overheads of the railway network and of the extensive railway organization. So competition lead to a loss of revenues for the railway, whereas the railway had to serve the orders and links, whereby it could not make profits but rather, incurred losses. In effect, the railway was threatened by ruin.

⁸² Paul van Elsen: *Die deutsche Landstraße, verkehrsgeographische Betrachtungen über ihre Entwicklung vom Postzeitalter bis zur Gegenwart*, Düren, 1929.

⁸³ According to the data of the chamber of commerce of Berlin, the average number of trucks was 1.46 per company, see Karl Mellerowicz: *Autobahnen und Kraftverkehrswirtschaft*, in: *Die Autobahn*, issue 9, 1934, pp. 368-373, here p. 370.

⁸⁴ Deutscher Industrie- und Handelstag, *Eisenbahn und Kraftwagen*, *ibid.*, p. 41. The journal of the chamber of commerce in Cologne reported on “wild” competition under the truckers, *Westdeutsche Wirtschaftszeitung* on 5 July 1929, p. 408 and on 11 January 1929, p. 34, Rheinisch-Westfälisches Wirtschaftsarchiv Cologne.

⁸⁵ Brian Bayliss: *European Transport*, London, 1965, p. 66. P. Wohl and A. Albitreccia, *Road and Rail in Forty Countries; Report prepared for The International Chamber of Commerce* (London 1935).

4. Regulation in the Federal Republic of Germany since 1950

4.1. Introduction

After World War II, the situation of the German transport industry was similar to the end of World War I, only worse. The infrastructure was damaged to a great extent. With respect to the new German states, the German Democratic Republic (East) and the Federal Republic of Germany (West), the remaining facilities of the railway were to be divided into two organizations, the *Deutsche Reichsbahn* (East) and the *Deutsche Bundesbahn*⁸⁶ (West). I report on rivalry and regulation in the Federal Republic of Germany. The German minister for the economy, Ludwig Erhardt, cancelled in 1949 the administration of prices and initiated a rapid economic development, which would become known as the German “economic miracle.”

In the years between 1950 and 1970, the Federal Republic of Germany experienced a nearly steady and relatively strong growth of the economy and of the motorization depending on each other. The highway network was expanded from 2,175 km in 1955 to 4088 km in 1970.⁸⁷ The division of labor in industrial production became more intensive and gave fresh impulses to truck transport which can be distinguished by two effects:

1. There was a shift in the structure of production from heavy industrial goods to finished goods in the consumer industries (structure effect). So the old-fashioned theory of location, which is oriented toward the interests of heavy industry, and that remote locations had to be subsidized with exemption of transport prices, became irrelevant.
2. In addition to this shift in the structure of production, modern concepts of logistical networks emerged, as e.g. just-in-time supply of material for automobile plants (logistics effect).⁸⁸

As a result of these developments the share of semi-finished and finished goods of the railway transport of cargo in wagon load units remained low and amounted in 1978 to less than 3% (measured in tons transported).⁸⁹ Thus the railway could not participate in the shift to

⁸⁶ Bundesbahngesetz (*Act for Bundesbahn*) on 13 December 1951, BG,II, 1951, p. 258-268.

⁸⁷ Bundesministerium für Verkehr (Ed.): *Verkehr in Zahlen (Traffic in tables)*, 2003

⁸⁸ G. Aberle: *Transportwirtschaft (Transport Economy)*, München 1997, p.83f

⁸⁹ Statistical Yearbook of the Federal Republic of Germany, 1980, p.263

consumer good industries and remained restricted to the transport of commodities (bulk goods).

4.2. Railway Policy

As after World War I, the *Deutsche Bundesbahn* had to carry heavy social and financial burdens.⁹⁰ The general act for railways of 29 March 1951 demanded in §6 a price system respecting the economy and adapted to the needs of the transport branches. It also called attention to the economic situation of the railways, establishing an obligation according to the public good.⁹¹ The three obligations mentioned above in section 2 to formulate the responsibility of the railway to the public good were carried over to the *Bundesbahn* and were interpreted for the time being as a main reason for protection of the railway from competition but later as an obstacle in making the railway fit for competition.⁹²

The act of 1951 that established the *Bundesbahn* declared many objectives but at the same time the railway had to achieve conflicting objectives. It should be run economically on the one hand and serve the economy on the other (§4). Furthermore, the transport minister could make decrees to accomplish political goals regarding traffic, economics, finance and social policies (§14). Thus, the government could do nearly everything with the railway being legitimized by law. And again, as in the 1920s, the German states had a strong position in the governing board with five seats out of 20 (§12). This distribution of power made it difficult in the future to rationalize the railway network at the expense of a certain state.

In the period from 1950 to 1980, the policy to convert the railway from steam to electricity was carried out. According to table 4, the share of steam engines dropped from 88% in 1950

⁹⁰ Minister of Transport (Ed.): Die Verkehrspolitik in der Bundesrepublik Deutschland 1949-1961 (*Traffic Policy in the Federal Republic of Germany*), Bad Godesberg 1961

⁹¹ Laaser, Claus-Dieter: Die ordnungspolitische Sonderstellung des Verkehrswesens bei der Liberalisierung des westdeutschen Wirtschaft nach 1945 (*The exceptional position of the traffic system at the liberalization of the West German economy after 1945*), Institut für Weltwirtschaft, Kiel, Arbeitspapier Nr. 292, 1987, p. 21

⁹² Gemeinwirtschaftlichkeit und Deutsche Bundesbahn (*Common economic efficiency and the Deutsche Bundesbahn*), herausgegeben vom Wissenschaftlicher Beirat, in: Zeitschrift für Verkehrswissenschaft, Vo. 59, 1988, p. 81-89

to 34% in 1965 and, correspondingly, the share of electric engines rose from 8% to 37% while the share of diesel engines increased to 29%.⁹³

Year	1950	1959	1965
Steam engine	88	60	34
Electric engine	8	20	37
Diesel engine	3	18	29

Table 4: Shares of engine types in percent (rounding errors)

Instead of changing completely to diesel engines, the policy toward electrical operation raised dramatically the fixed costs the railway had to cover and this structure of costs further deteriorated the position of the railway in competition with the truck. The CEO of a big German supplier of electrical equipment, AEG, estimated in 1951 the costs of investment of an electrical railway for lines and electrical networks at a sum of 600,000 DM per km of tracks, whereas in the 1950s the sum of 1 million DM per km of tracks was invested.⁹⁴

The traffic policy of West Germany responded to the strong economic development in two ways. On the one hand, it supported the motorization by building highways, road networks and arterial roads out of the cities. On the other hand, it supported the railway with different policies. The high financial deficit of the *Bundesbahn*, which went from 1.5 billion DM in 1967 to 3.8 billion DM in 1976,⁹⁵ had to be covered and a long series of concepts were tried to reduce the deficit and make the organization more efficient, but without success.⁹⁶ A long series of approaches took place to reduce railway links with weak demand in the cargo network. The service of less than wagon freight resulted in a deficit (374 million DM in 1958) whereas the cargo transport with wagon load made profits (580 million DM in 1958).⁹⁷ So the number of railway stations where less than wagon load cargo could be handled dropped rapidly to less than one-tenth from

- 5,897 in 1958, to
- 3,629 in 1964, to
- 2,964 in 1969, to

⁹³ Brand Commission, op.cit., p. 177, and Minister of Transport (Ed.): Die Verkehrspolitik in der Bundesrepublik Deutschland 1949-1965 (*Traffic Policy in the Federal Republic of Germany*), Hof 1965, p 100

⁹⁴ Op. cit., and Spennrath, F.: Die Elektrifizierung von Schienenbahnen (*The Electrification of Railways*), in: Brand, Leo: Schiene und Strasse (*Tracks and Road*), Dortmund 1951, p. 45. On the electrification policy see Michael Hascher: Die Stromsystemfrage bei der Elektrifizierung der Eisenbahnen in Europa 1950 –1955. Das Beispiel der Entscheidungsfindung in der Bundesrepublik Deutschland, in: Monika Burri, Kilian T. Elsasser, David Gugerli (Hersg.): Die Internationalität der Eisenbahn 1850-1970, Zürich 2003

⁹⁵ Die Bundesbahn, Vol. 43, 1969, p. 712, and Vol. 53, 1977, p. 625

⁹⁶ See for example the report of the Brand Commission 1960, in: Document of the Parlament, 1602 on 30 January 1960 and Schulz, Günther: Die Deutsche Bundesbahn 1949-1989, in: Lothar Gall, Manfred Pohl (Ed.): Die Eisenbahnen in Deutschland (*Railways in Germany*), München 1999, p. 320-378

⁹⁷ Brand Commission, op. cit. p. 115. Comments on the result of the Brand Commission are given by: Wissenschaftlicher Beirat beim Bundesverkehrsministerium (Ed.): Grundsätze der Verkehrspolitik, Schriftenreihe des Beirats, Heft 9, Bad Godesberg 1961

- 1,014 in 1970 and to
- 421 in 1976.

And the number of railway stations where wagon load cargo could be handled decreased from 5,889 in 1959 to 4,789 in 1969.⁹⁸ In the traffic concept of transport, minister Leber explained that the railway network should be reduced from 31,000 km in 1967 to 24,500 km.⁹⁹ Surprisingly, the reduction of the cargo network resulted in lower savings than the reduction in the passenger network. The transport ministry calculated in 1978 the savings from a reduction of 3,000 km cargo network to 50 million DM and the reduction of 6,000 km of the passenger network to 500 million DM.¹⁰⁰

4.3. The Truck Policy

The policy to support the railway was accompanied by a harsh policy against trucks and truck entrepreneurs, reminding one of a prosecution of criminals. With this policy, Germany departed radically from the traffic policy of the provisional military government from 1945 to 1949 in the western zones, which severely restricted truck traffic conducted by the railway in order to support the establishment of private transport companies. Especially the American branch in the provisional military government claimed the freedom of trade as a basis of a democratic development and fought against the regulations of the economic administration at the state level¹⁰¹. But just at the time of the foundation of the Federal Republic of Germany, in September 1949, the freight transportation act of 1935 was enacted again with only minor

⁹⁸ H. Pottgiesser: Die Bundesbahn im ländlichen Raum (*The railway in rural regions*), in: Die Bundesbahn, Vol. 45, 1971, p. 590 and Ploog, H: Alternativen zur Umgestaltung des Kleingutverkehrs der Bahn (*Alternatives for less than wagon load traffic by train*), in: Zeitschrift für Verkehrswissenschaft, Vol. 48, 1977, p. 33-41

⁹⁹ „Programm zur Gesundung des deutschen Verkehrswesens“ (*Program for Restructuring German Traffic*), for short: Leber-Plan, in: Bulletin des Presse- und Informationsamtes der Bundesregierung, Nr. 103, 1967, p. 881ff, here p. 885

¹⁰⁰ Minutes of the 73th session of the German Parliament, 17 February 1978, 08/73, p. 5792

¹⁰¹ Decree no. 22 of 9 January 1946 and no. 23 of 28 October 1946, in: Verkehrsblatt des amerikanischen und britischen Besatzungsgebietes (*Traffic Bulletin of the American and British zone*), No. 1, 1947, p. 7; Letter of the Military Government of the state Hessian to the Economic Administration of 2 December 1948, in: R. Anders: Proklamationen, Gesetze und Verordnungen der Militärregierung Deutschlands, Karlsruhe, C.F. Müller Publisher, 1946-1949, Fa6a/3; W. Reuss: Die Gewerbefreiheit – Eine kritische Studie (*Freedom of Trade*), Stuttgart 1949. In contrast to their policy in Germany, in the United States a rigid regulation of truck services was established, see Rose, Mark H.; Seely, Bruce; Barrett, Paul F.: The best transportation system in the world: railroads, trucks, airlines, and American public policy in the twentieth century; Columbus, Ohio 2006.

changes, but the compulsory membership of the "*Reichs-Kraftwagen-Betriebsverband*" – RKB (Council of Truck Operators) was cancelled¹⁰².

In 1952, a new version of the freight transportation act to protect the railway was released. Many concepts from the act of 1935 were adopted. Surprisingly, the act resulted to a great extent in more severe restrictions than the Nazi act of 1935. The number of paragraphs inflated from 41 to 104. According to §54, the control of the trucking companies shifted from the Council of Truck Operators to a new authority, the Bundesanstalt für Güterfernverkehr (BAG, the federal agency of long-distance freight traffic). The BAG had to be financed by duties on the trucking companies and by the companies operating private carriers (§75).¹⁰³ The BAG existed until 1994. At this end of the German regulation era, the duties added up to a budget of 108 million DM p.a. for the BAG which employed 1,300 civil servants,¹⁰⁴ demonstrating the heavy burden of regulation for the transport companies.

While in the act of 1935 the short-distance transport had been without regulation, there are 9 paragraphs in the new act regulating the general short-distance transport. To conduct short-distance transport the entrepreneur had to apply for permission (§80) that could be given if the entrepreneur had the ability to operate the business. The short-distance transport on regular lines is regulated with 8 extra paragraphs. In addition, the permission was tied to the case that the interests of the *Bundesbahn* should be concerned (§91). As a new barrier for long-distance transport, the concept of the **maximum number of licenses** for trucks of commercial transport companies was introduced (§9). The number of trucks operating had to be limited by a decree by the transport minister and to be distributed to the states. The number changed often, but remained very low. In 1957, already changed for the third time, it amounted to 15,614¹⁰⁵ - comparable to the status in the Nazi era. Although a very important figure for the transport industry, it had never been published in the standard statistical tables, as "Traffic in Tables", published by the transport minister or in the Statistical Yearbook of the Federal

¹⁰² Verkehrsblatt des Vereinigten Wirtschaftsgebietes (*Traffic Bulletin of the united economic zones*), Nr. 22, 30 September 1949, p. 122-126. In the act, the duties of the council RKB was transferred to the director of the Transport Administration. In the justification of the act the Transport Administrations argued that the conditions of the emergency act of 1931 prevailed and that the act serves the interests of all parties in the economy.

¹⁰³ The forth decree on duties to cover the costs of BAG on 7 December 1955 demanded 1.85% of the revenues of the commercial carriers and DM 70 for each truck from the private carriers, in: Verkehrsblatt, Vol. 10, 1956, p. 27

¹⁰⁴ See G. Aberle: *Transportwirtschaft*, München 1997, p. 96ff.

¹⁰⁵ Dritte Verordnung über die Höchstzahlen der Kraftfahrzeuge des Güterfernverkehrs (*Third ordinance on the maximum number of automobiles in long-distance freight transport*), in: Verkehrsblatt – Amtsblatt des Bundesministers für Verkehr (*official gazette of Transport minister*), Heft 18, 1957, p. 467

Republic of Germany. This resulted in the public having only minor concern when it came to the burdens of regulation in the transport industry. In 1970, the number of licenses was fixed at 18,322 and remained stable until 1989.¹⁰⁶

The ceiling of the number of trucks employed also applied to the commercial transport of furniture of removal firms and for medium range (150 km) transports (§13) – a new concept of regulation. Although the private carriers did not have to apply for permission (§50), the act needs 4 paragraphs to describe this kind of transport. But the trucks of companies operating private carriers had to be registered at the BAG (§52). In contrast to the act of 1935, where the commercial transport of furniture of removal firms is not regulated, the new one needs 8 paragraphs to do so.

In a summary, the new act exhibits a strong tendency toward overregulation, introducing new traffic categories and a number of curious exemptions, such as meat stock (§49) and beekeepers (§4). This tendency to overregulate continued and increased in the modifications of this act until 1975.

As table 5 below shows, the quantity of cargo shipped by commercial carriers increased from 112 million tons in 1975 to 186 million tons in 1990. This great increase does not conform to the policy to let the number of licenses for long-distance transports remain stable at the level of 18,322. One can not satisfactorily resolve this contradiction. But in addition to this number of 18,322, one has to consider licenses for long-distance transports with reduced total weight and licenses for medium-range transport. Further, the enterprises could run several trucks in sequence with one license. So the transport capacity offered grew at a moderate rate of 1.6% p.a. from 1950 to 1990¹⁰⁷ (cf. table 5 below). As table 5 exhibits, the ceiling of the commercial truck transport was an incentive to use private carriers. Both in absolute terms and in the market share, the transportation by private carriers increased dramatically between 1960 and 1990. So, despite protection measures in favor of the railway, the truck transport increased and the protection policy failed.

¹⁰⁶ Data from BAG. I thank the president of BAG, Mr. Vorrath, for collecting the data. Sechste Verordnung über die Höchstzahlen der Kraftfahrzeuge des Güterfernverkehrs on 3 July 1970, in: BG, I, 1970, p. 1101. In addition to this number there are licences for international transports and regional transports.

¹⁰⁷ See C.-F. Laaser: Wettbewerb im Verkehrswesen (*Competition in Traffic*), Tübingen 1991, table 5-7

In order to cope with the phenomenon of truck transportation, the policy reacted helplessly and tried to extend the restriction of truck transport in a rapid succession of acts and ordinances. Thus in 1961, the freight transportation act was altered for the fourth time.¹⁰⁸ The transport Minister established its own bulletin¹⁰⁹ to issue a broad stream of decrees. The legal framework became more and more complex with a great number of exemptions¹¹⁰ resulting in great transaction costs for private enterprises to run their businesses and to train their employees.

The policy against trucks was carried out despite the fact that trucks played only a small role in the motorization wave in comparison with the number of cars. Transport minister Leber reported for the year 1966 10.9 million cars; 77,000 trucks of private carriers and 24,800 (in 1960) trucks in the commercial long-distance transport trade.¹¹¹ Facing the great financial deficits of the *Bundesbahn*, the trucks seemed to be responsible. In addition, the policy saw in the long-distance transports an important factor leading to congestions on roads. The policy to restrict the number of trucks or at least to slow the expansion of truck transport in favor of the railway was legalized because of these two reasons. Up to now, nearly every politician in Germany formulates the objective to shift cargo from truck to the rail shown by the numerous initiatives documented in the records of both federal and state government.¹¹² One can regard this objective as an eternal hope of the traffic policy.

The policies against trucks were supported by one of the highest courts of the Federal Republic of Germany, the Federal Supreme Court. In a series of decisions, it decided against applicants who, as entrepreneurs in the transport trades (passenger and cargo), claimed that regulations restrict the freedom of trade guaranteed by the German constitution. The main argument of the court has been that the *Bundesbahn* is an **outstandingly important common**

¹⁰⁸ Act on 1 August 1961, BG I, 1961, p.1157. From 1951 till 1998 the freight transportation act had been changed 37 times, so nearly each year once, see K. Trinkhaus and R. Maiworm (Ed.): *Güterkraftverkehrsrecht (Legislation of Cargo Transport by Trucks)*, 4th edition, Berlin 1998, section M 148

¹⁰⁹ Verkehrsblatt – Amtsblatt des Bundesministers für Verkehr (*official gazette of Transport minister*). The list of decrees is published in Minister of Transport (Ed.): *Die Verkehrspolitik in der Bundesrepublik Deutschland 1949-1965 (Traffic Policy in the Federal Republic of Germany)*, Hof 1965, p.415s

¹¹⁰ See e.g. the exemption decree to the long distance act, 29 July 1969, BG, I, 1969, p. 1022

¹¹¹ Leber-Plan, op. cit.

¹¹² See the motion of the member of the Bavarian Parliament, Seitz, of 25 January 1985, Proceedings of the Parliament, 10th period, paper no. 5807, the motion of the member of the Bavarian Parliament, Kolo, of 17 April 1980, Proceedings of the Parliament, 9th period, paper no. 4897, or the (joint) question of the member of the Federal Parliament, Bamberg, of 15 June 1983, Proceedings of the Parliament, 10th period, paper no. 156. The papers are drawn from the server www.parlamentsspiegel.de.

good and therefore worthy of protection, especially in a situation of high financial deficits.¹¹³ So, curiously enough, the high deficit was the reason for protection, whereas if one considers competition, a high deficit is a warning signal of an insufficient adoption of the railway to the market needs. But the last decision in 1975 gave rise to severe criticism from the side of traffic science.¹¹⁴

Besides the freight transportation act, the goal to protect the railway has been accomplished by three strategies:

1) The policy tried to make transport by trucks more expensive. In the act of transport taxation of 2 March 1952, the tax amounted to 7% of the transport price of cargo transport on railways and on commercial truck transports.¹¹⁵ For long-distance transports of private carriers, the tax amounted moderately to 0.0099 DM per tkm.¹¹⁶ Then in 1954, transport minister Seebohm made a radical change to restrict the private carriers. His aims were higher taxes and prohibition of the transport of commodities (bulk goods).¹¹⁷ In his study, Klenke evaluates the struggle of the interest groups against the act.¹¹⁸ As in 1930, the Chambers of Commerce together with the representatives of the steel industry advocated for a regulation of the transport branches where the railway played the role of the common good. Finally, after a debate in Parliament on 6 April 1955 about the act of financing traffic, Seebohm could only succeed on the point of taxation for private carriers. It increased to¹¹⁹

- 0.003 DM per tkm from 1 June 1955
- 0.004 DM per tkm from 1 October 1956
- 0.005 DM per tkm from 1 April 1958

¹¹³ Decisions of the Supreme Court of Constitution, Vol. 11, Tübingen, 1961, p. 184, Vol. 16, 1964, p. 169, Vol. 38, 1975, p. 87s, Vol. 40, 1976, p. 218

¹¹⁴ Hamm, W.: Überholtes Konkurrenzschutzdenken (*Old fashioned concepts of protection from competition*), in: Internationales Verkehrswesen, Vol. 28, 1976, s. 328s

¹¹⁵ The railway did not pay the tax to the Finance administration, see the discussion on the Verkehrsfinanzgesetz, Gesetzdokumentation II/123, Archiv des Bundestages, statement of Verband öffentlicher Verkehrsbetriebe (VÖV) on 20. October 1954, Vol. B2

¹¹⁶ BG, I, 1951, p. 159

¹¹⁷ Klenke, D.: Freier Stau für freie Bürger – Die Geschichte der bundesdeutschen Verkehrspolitik 1949-1994 (*Free traffic jam for free citizens – the history of German traffic policy 1949-1994*), Darmstadt 1995, p. 22

¹¹⁸ Klenke, D.: Bundesdeutsche Verkehrspolitik und Motorisierung (*The German traffic policy and motorisation*), Stuttgart 1993, p.191-267

¹¹⁹ BG, I, 1955, p. 166

But outside Parliament, Seebohm could apply other measures. To restrict the truck transports further, Seebohm reduced the total weight of trucks from 40t to 24t by a decree of the state chamber in 1956, so that truck transport would be less profitable.¹²⁰

The new minister of transport, Georg Leber from the Social Democratic Party, tried to apply the same measures. By introducing the value-added tax, the taxes on transport would have been cancelled at the end of 1967. So, the private carriers would operate without any further tax other than the value-added tax. The Leber-plan, announced already on 1 September 1967,¹²¹ decried overcrowded roads and the deficit of the rail of 5 billion DM in the near future. In the first draft, it demanded the prohibition of transports of heavy goods and of commodities, a stop to increasing the maximum number of trucks to be licensed in the commercial long-distance traffic and a tax on cargo transports. These measures should be linked with a policy of restructuring the railway with a volume of 12.5 billion DM to make it more profitable and to encourage investments in the bimodal transport facilities (see point 3 below) to shift cargo from the road to the rail.¹²²

The Leber-plan induced a lively debate on the restrictions of the freedom of trade and later in 1969, as an act, it introduced a tax on commercial transport companies of 0.01 DM per tkm and for private carriers of 0.05 DM (for heavy trucks) per tkm (§4),¹²³ but it did not succeed in prohibiting transports of heavy goods and commodities. The measures of the Leber-plan were restricted to 2 years and resulted in 1.3 billion DM of tax revenues.¹²⁴ The act had a great number of exemptions, for example, for transports in or out of regions with a weak economy (§6), such as the border to East Germany. So the impact of the act on transport streams was hardly noticeable. The duty on private carriers could not be prolonged further after 1971 because in 1965, the European Economic Community had made a decision to harmonize the taxation of the different kinds of transport after the introduction of the value-added tax in the community.¹²⁵

¹²⁰ Decree of 21 March 1956, BG, I, 1956, p. 127f

¹²¹ Leber-plan, op.cit. see also the draft of the traffic program 1968-1972 of the government, Document of the Parliament V/2494 on 19 January 1968

¹²² Op. cit., p. 890

¹²³ Gesetz über die Besteuerung des Strassengüterverkehrs on 28 December 1968 (*law on taxation of road freight transport*), BG, I, 1968, S. 1461

¹²⁴ Statistical Yearbook of the Federal Republic of Germany, 1971, p. 404, 1972, p. 408

¹²⁵ Amtsblatt der EG (*official gazette of European Union*), 1965, Nr. 88, p. 1500, see also the recommendations of the European Commission in: Bundestagsdrucksache (*Document of Parliament*) V/2494, 1968

2) The supply of trucks should be reduced by licensing the private carriers in 1971 by modification of §50 of the freight transportation act.¹²⁶ This was done by inflating §50 to 6 additional paragraphs, 50a till 50f. Besides complicated exemptions, the carriers could only get a license if the railway did not make a fair offer (§50d) for their transport request. This was a tightening up of the long-distance freight transportation act of 1952, as there had been no licensing. But this measure could not be really implemented because the BAG had a work overload in deciding on the plenty applications for licensing. Also, the railway made offers only in 0.2% of the 20,000 applications each year.¹²⁷ In the modification of the freight transportation act in 1975, the duty for a license was cancelled in §50.¹²⁸ But in the ideas of traffic politicians, the trucks of private carriers remained a source of disturbance.¹²⁹ Thus in the freight transportation act of 1975, the new case of counterfeit traffic of private long-distance carriers was introduced.

3) The railway offered the service of bimodal transport either by container transport or by loading trucks on wagons (motorail service) for long distances. The definition of bimodal transport is that during transportation, the cargo remains in its loading unit on the wagon, such as in the container or in the truck, without being transshipped. This policy was aimed at shifting cargo traffic from the road to the rail and could be understood as a marketing instrument of the railway in the struggle against the truck. The bimodal transport should be more socially responsible because it supported the train, and as a new consideration in the 1980s, it protected the environment. In Germany, bimodal transport has a long history, as Zeller points out in his study.¹³⁰ In the 1950s and 60s, the implementation of bimodal transport has primarily been seen as a problem of suitable technical solutions whereas organizational measures, speed and the punctual timetables of railway transport have not been taken into consideration. Therefore, the supply of bimodal transport services had no success in the transport industry. In 1965, only 0.04% of the cargo traffic on railway and on road was conducted as bimodal transport.¹³¹ This has changed since 1970, as better wagons have been developed, the density and the quality of bimodal transport railway stations increased with an

¹²⁶ BG, I, 1971, p. 2149

¹²⁷ Klenke, D: Freier Stau für freie Bürger (*Free traffic jam for free citizens*), op.cit., p.81

¹²⁸ Act on 6 August 1975, BG, I, p. 2133

¹²⁹ D. Winter: Werkverkehr – Störfaktor der Verkehrsordnung in der Bundesrepublik Deutschland? (*Private carriers – disruptive factors of traffic order in the Federal Republic of Germany?*), in : Zeitschrift für Verkehrswissenschaft, Vol. 49, 1978, p. 135-146

¹³⁰ T. Zeller: Kombiniertes Verkehr – die ewige Zukunftshoffnung (*Bimodal Transport – the eternal hope for the future*), in: Harry Niemann und Armin Hermann (Ed.): 100 Jahre LKW (*100 years of trucks*), Stuttgart 1997, p. 379-394

¹³¹ Op. cit. , p. 387

investment of 250 million DM as well as the quality of the service increased and the marketing for the services has been improved.¹³² So, as the result of the Leber-plan, a company for bimodal transport services was established as an organization of the road transport companies¹³³ to conduct bimodal transport and since 1972 trucks for motorail have been exempted from the tax on motor vehicles.¹³⁴ The following chart demonstrates the growth of motorail service between 1970 and 1990.¹³⁵

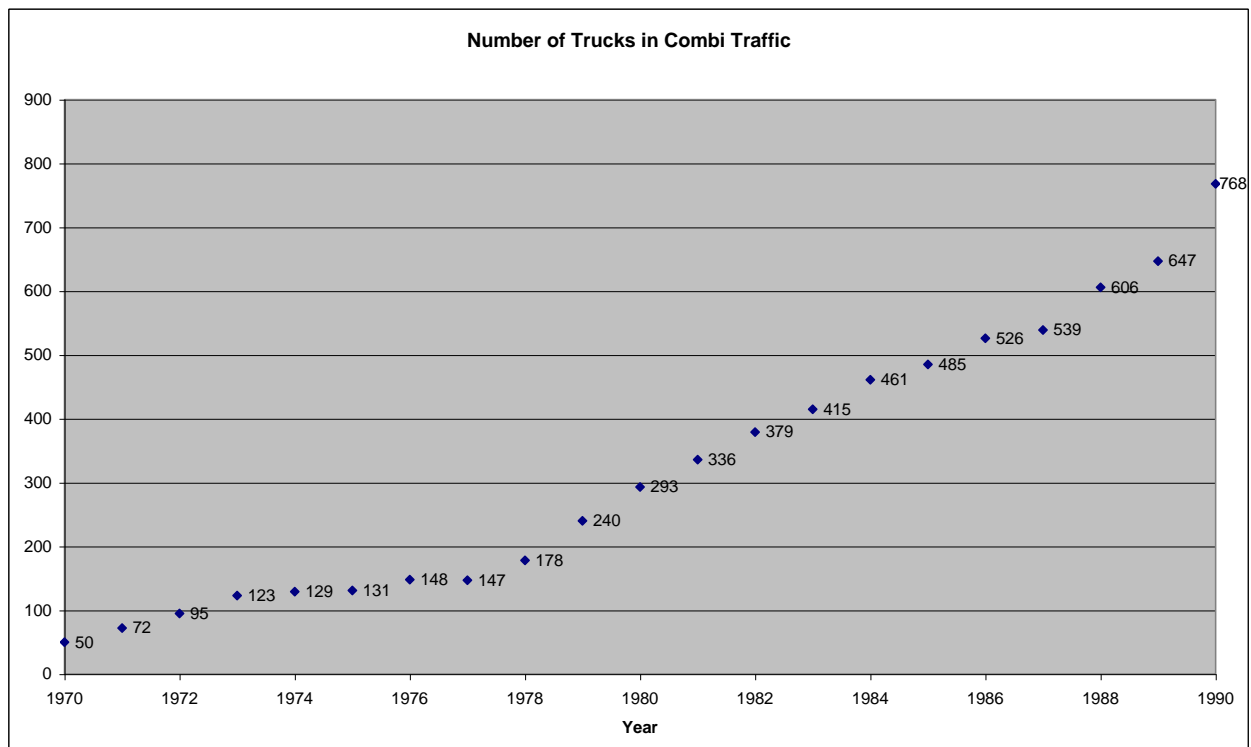


Figure 2: bimodal transport

In 1990, motorail transport increased to 12 million tons and container transport increased to 13 million tons.¹³⁶ With this total of 25 million tons, the bimodal transport covered less than 9% of the cargo of the railway in 1990 and less than 8% of the volume of the long distance traffic of German carriers and commercial truck transport, which in 1990 amounted to 332.9 million tons (cf. table 5. In 1990, there was 133 million tons of additional cargo on trucks by foreign carriers). This low share of bimodal transport in the transport market is due to disadvantages in the organizational framework of the service, as there are temporary shortages in capacity and long-lasting handlings at the railway stations. The following figures show this problem: The share of idle time (when transport is not moving) at the transport duration

¹³² Opt. cit., p. 391

¹³³ Op. cit., p. 390

¹³⁴ Klenke, op. cit., p. 81

¹³⁵ Vahrenkamp, R.: *Logistikmanagement (Logistics management)*, 4. Auflage, 2000, p.278

¹³⁶ Data from transport ministry, see Zeller, op. cit., p. 393

amounts to 39% in bimodal transport in comparison with only 12% in truck transport resulting in a longer duration of the transport of 20% to 30% in comparison with a direct truck transport.¹³⁷ As the factor speed in modern logistical systems is critical, bimodal transport had a drawback. An additional obstacle for bimodal transport was the relatively short distances within the Federal Republic of Germany. On average, bimodal rail transport is, at 192 km, under the limit of 300 km, which is in general the minimum distance for such transport to make economic sense.¹³⁸ But to make bimodal transport economically feasible, a minimum distance of 300 km is required.¹³⁹ Because politicians had formulated the goal to shift cargo from road to rail so often and station wagon? traffic has been heavily supported by traffic policy since 1960 without hindering the increase in long-distance transports on the road (cf. table 5), Zeller ironically describes station wagon? traffic as the “eternal hope”.

4.4 The development of market shares

But all these measures pointed out above could not prevent the railway from losing cargo in absolute terms since the peak of 1970 and in relative terms because of the strong demand of truck transport capacity. Table 5 gives the data in quantity (tons) and output (tkm) for the railways (including *Bundesbahn*) in comparison to German commercial transport companies (long-distance) and German private carriers (long-distance).¹⁴⁰

¹³⁷ Forschungskonsortium Kombiniertes Verkehr (Hrsg.): Strategiekonzepte für den Kombinierten Verkehr (*Strategic concepts for station wagon? traffic*), Neu-Isenburg 1990, p. 20

¹³⁸ Statistical Yearbook of the Federal Republic of Germany, 1980, p.263

¹³⁹ Vahrenkamp, op. cit., p. 286

¹⁴⁰ Traffic in Tables, ed. by the transport ministry, 2003, section B6

	Year	1960	1965	1970	1975	1980	1985	1990	Average growth rate p.a. 1960-1990
Output in Bill. tkm									
Railway total, with subcategories		53,1	58,2	71,5	55,3	64,9	64	61,9	0,5
Waggonload		51,5	56,5	69,9	54,1	63,6	63	60,8	
Expressload, less then waggon load		1,6	1,7	1,6	1,2	1,3	1	1,1	
Commercial truck transport		18,5	23,3	28,7	31,8	41,1	43,8	55,5	5,6
Private carrier		3,9	5,8	7,4	13,7	17,5	21	26,1	6,6
Sum		75,5	87,3	107,6	100,8	123,5	128,8	143,5	
Market shares in % from sum									
Railway		70,3	66,7	66,4	54,9	52,6	49,7	43,1	
Commercial truck transport		24,5	26,7	26,7	31,5	33,3	34,0	38,7	
Private carrier		5,2	6,6	6,9	13,6	14,2	16,3	18,2	
in Mio. t									
Railway total, with subcategories		317,1	311,4	378	315	350,1	324,4	303,7	-0,2
Waggonload		309,3	305,3	372,3	311,4	346	321,3	300,6	
Expressload, less then waggon load		7,8	6,1	5,7	3,6	4,1	3,1	3,1	
Commercial truck transport		71,3	88,4	104,8	112,3	140,9	146,8	186,5	1,6
Private carrier		23,5	34,1	41,1	79,2	99,6	119,1	146,4	5,5
Sum		411,9	433,9	523,9	506,5	590,6	590,3	636,6	
Market shares in % from sum									
Railway		77,0	71,8	72,2	62,2	59,3	55,0	47,7	
Commercial truck transport		17,3	20,4	20,0	22,2	23,9	24,9	29,3	
Private carrier		5,7	7,9	7,8	15,6	16,9	20,2	23,0	

Table 5: Market shares in the Federal Republic of Germany of German carriers for long-distance cargo transports

In the following charts the market shares are visualized:

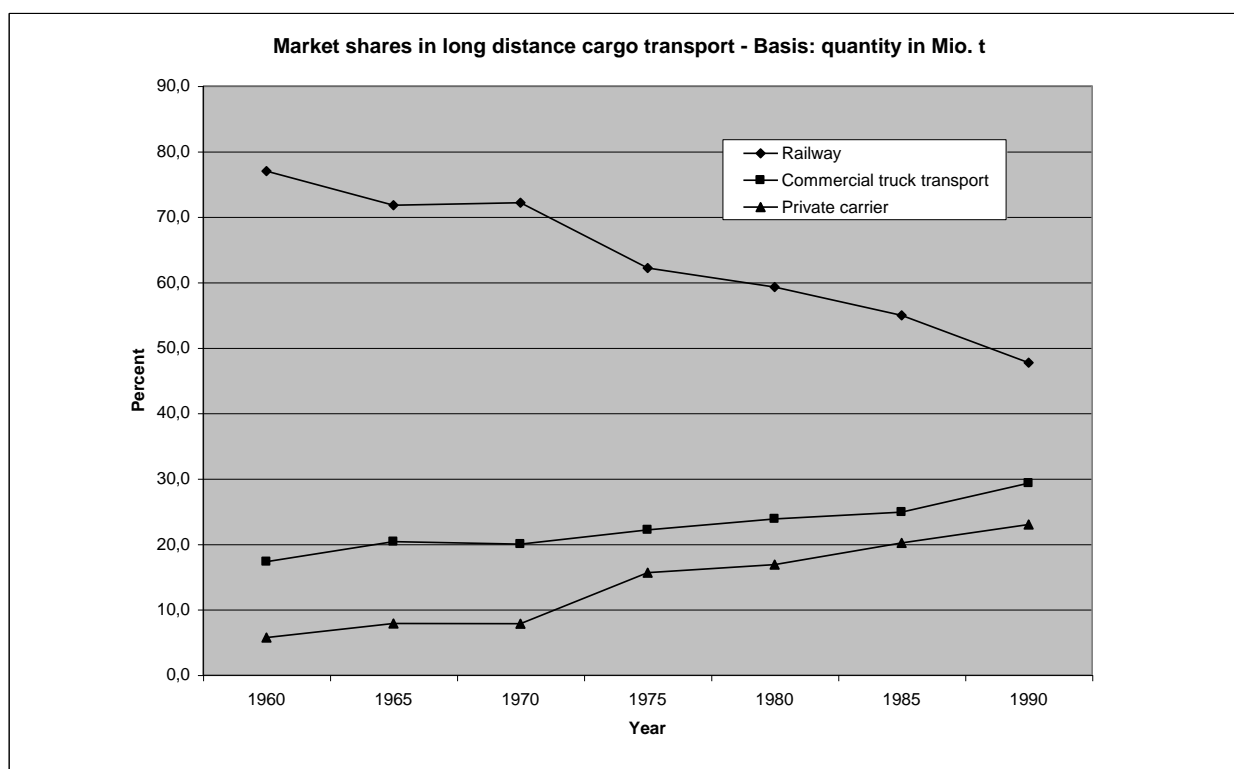


Figure 3

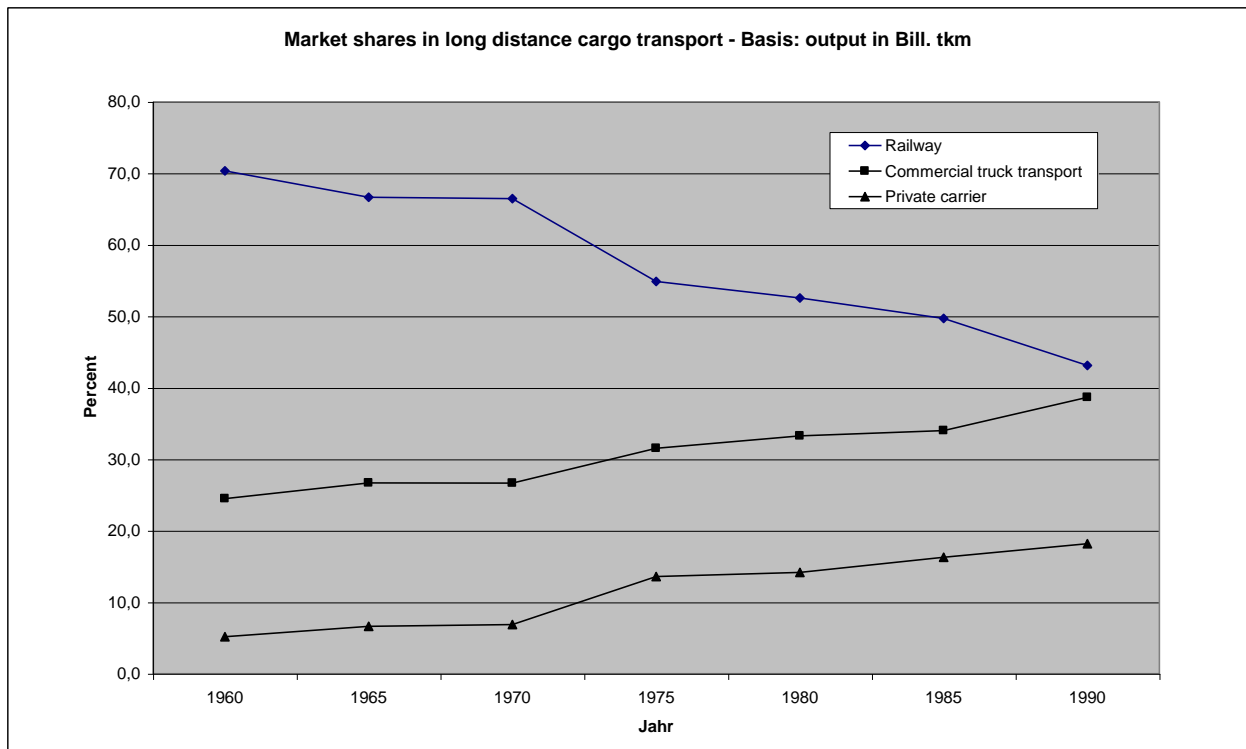


Figure 4

Table 5 and the charts show the decline in market shares of the railway and the growth of commercial and private carriers in the period from 1960 to 1990. The commercial carriers perform a reluctant growth of 1.6 % p.a. in quantity due to the heavy restrictions. The private carriers exhibit the strongest growth rate, partly due to the restriction of commercial carriers and partly due to the high utility the private carriers provide. As the pressure of the market intensified, the transport minister had to increase the number of licenses for commercial carriers, in some cases using §13a of the freight transportation act allowing exemptions for medium range. There has been pressure from politicians to increase the number of licenses to provide transport services in sparsely populated areas, as e.g. the boarder to East Germany.¹⁴¹

¹⁴¹ See the motion of the member of the Bavarian Parliament, Seitz, of 25 January 1985, Proceedings of the Parliament, 10th period, paper no. 5807

5. The Stakeholders of Regulation

In liberal West Germany, the efforts to regulate cargo transports remained a strange policy field, being a sector of exemption in the act of 1957 against cartels.¹⁴² While the regulation from 1931 by Chancellor Brüning during the world economic crisis and during the Nazi dictatorship seemed reasonable, it is surprising that it was carried over to the Federal Republic of Germany, which had a liberal political system and exhibited a stable and very successful economic development in the framework of a liberal market system.¹⁴³ The transport sector remained an exemption in the liberal economy of Germany and no notice had been taken of the positive experiences with liberalization of transport markets in Switzerland, Great Britain and the Netherlands.¹⁴⁴ Without doubt, the cargo transport contributed to the economic growth. So the question arises as to how the regulation could be explained.

We follow an approach from the school of economics of institutions explaining regulation as a relationship between the supply and demand of markets.¹⁴⁵ One can show that regulation is in the interest of private agents of the market, because the profits are stabilized and extra rents could be sought. Further, regulation develops a similar system of goals on both sides: the regulation agency and the regulated agents. This adoption process could lead to a situation where the regulation agency looks after the agents (“capture-theorem”). As Aberle points out, the regulation in Germany resulted in a diminished degree of competition for the commercial transport companies being in the possession of a license. So the regulation converted from protection of the railway to protection of the commercial transport companies.¹⁴⁶ No wonder that these firms have been vehement advocates of the regulation of capacity and prices.

Laaser identifies in his study different groups which have a strong interest in regulation.¹⁴⁷ First of all, there is the railway representing a large and powerful organization since 1920. The high number of employed people, the number of widely distributed repair sheds¹⁴⁸ and administration centers and the cargo supply for the states in Germany provided this

¹⁴² §99 of the Act against Restrictions in Competition of 27 July 1957, in: BG, I, p. 1099

¹⁴³ The regulations of the lawyers and of the craftsmen also carried over from the Nazi period.

¹⁴⁴ Laaser, 1987, op. cit., p. 38

¹⁴⁵ Stigler, G.: The Theory of Economic Regulation, in: Bell Journal of Economics and Management Science, Vol. 2, 1971, p.3-21

¹⁴⁶ Aberle, op.cit., p. 96

¹⁴⁷ Laaser, 1987,op. cit.

¹⁴⁸ There were 35 repair sheds in West Germany in 1965, see Minister of Transport (Ed.): Die Verkehrspolitik in der Bundesrepublik Deutschland 1949-1965 (*Traffic Policy in the Federal Republic of Germany*), Hof 1965, p. 116

organization with a great influence in politics. Several decisions of railway management have shown that they could get something through against the politicians, as e.g. the Schenker case showed¹⁴⁹ in 1931, where the management secretly bought the road carrier Schenker without the government taking notice. Or as another case one can refer to: the refusal of Dorpmüller to release more licenses during the transport crisis of 1938 (see above). In more recent years one can see that management has successfully opposed the purpose of traffic policy and of the scientific advisory board to separate the network of tracks from the operations of the trains.¹⁵⁰

Further stakeholders of regulation are the politicians who collect votes by fighting for the preservation of railway services and fighting against trucks on the roads, which is not very popular for the many car drivers. The interests of vote-collecting corresponded to a great share of the population, such as pupils and pensioners, being interested in reduced train ticket prices.

In the beginning of the Federal Republic of Germany, 1949 to 1953, there were several forces towards regulation as Laaser pointed out:¹⁵¹

- The administration of the transport minister, knowing only regulated markets and trying to continue the old policy, which had been evaluated to be well-trying.¹⁵² The administration expected the railway to be a cash cow since it only had experience with the railway being a moneymaker, but no experience with long-lasting and very high financial deficits.
- The regulation of the market gave parts of the administration of the transport ministry a reason for existence. Therefore, in the cases before the German Supreme Court (cf. note 85), the representatives of the transport minister brought forward arguments against any moderate liberalization of the transport market.
- The scientific advisory board of the transport minister, at first consisting partly of jurists, politicians, and members who had studied political science – the German anti-liberal version of economics - and engineers with limited knowledge about competition in markets.¹⁵³ This board supported the doctrine of the common good of the traffic being prior to economic activity.
- The established enterprises of road transport calling for regulation to fight against the plenty of newcomers in the unregulated market between 1945 and 1951.

¹⁴⁹ See Kock, op. cit. and E. Kolb: *Die Reichsbahn vom Dawes-Plan bis zum Ende der Weimarer Republik*, in: Lothar Gall, Manfred Pohl (Ed.): *Die Eisenbahnen in Deutschland (The railways in Germany)*, München 1999, p. 160

¹⁵⁰ Laaser, Claus-Dieter: *Die Bahnstrukturreform – Richtige Weichenstellung oder Fahrt aufs Abstellgleis? (The structural reform of the Bahn – right position of points or ride on the holding track?)*, Kieler Diskussionsbeiträge, Nr. 239, 1994

¹⁵¹ Laaser, 1987, op. cit., p. 43-49

¹⁵² Minister of Transport (Ed.): *Die Verkehrspolitik in der Bundesrepublik Deutschland 1949-1961 (Traffic Policy in the Federal Republic of Germany)*, Bad Godesberg 1961, p. 48

¹⁵³ See Transport Minister (Ed.): *50 Jahre wissenschaftlicher Beirat (50 Years of Scientific Advisory Board)*, Bonn 2002

6. Pressure from the European Community to liberalize

In the 1980s, the era of regulation came to an end. The community of traffic scientists demanded more competition in the transport markets and developments in the European Community especially strengthened the market forces.¹⁵⁴ In the treaty of 1958 of the European Community, article 3 demands a common traffic policy and article 79 the liberalization of the service sector. But up to 1985 there had been only a marginal progress toward a common traffic policy. The conflict was set between the liberalization of price formation and of market entry on the one side, and the harmonization of the general conditions of competition on the other side, as e.g. the tax on fuel. Both problems are linked, leading to a blockading situation.

But in the decision of 1985, the European Court summoned the European Community to implement article 79 and decided that there is no link between liberalization and harmonization. At the same time, in 1985, the European Community decided to establish the Common Market on 1 January 1993, which had great implications for cross-border traffic.

As a consequence of these two decisions, cross-border traffic has been liberalized in various steps resulting in the breakdown of German regulation policy because competing enterprises from abroad now have free entry for their trucks into the German market:

- Since 1988, the number of licenses for the community-wide operation of trucks grew with a rate of 40% p.a.
- In 1989, the regulated prices for cross-border traffic were substituted by recommended prices and since 1990 these prices are left to the market.
- In 1990, the prohibition of cabotage was replaced by a community-wide contingent growing with a rate of 30% p.a. The term cabotage means the transport inside one country by an entrepreneur from abroad.

As in the telecommunication market, the European Community led to an end of regulation in the German transport market. In the freight transportation act of 1993, the regulation of prices by the RKT was cancelled. The prices dropped by 20% and price competition with the railway became more intensive¹⁵⁵. In the freight transportation act of 1998, the distinction of local traffic and long-distance traffic, the term border crossing traffic and the maximum number of registered trucks was abandoned. Only licenses for truck entrepreneurs remained

¹⁵⁴ G. Aberle: *Transportwirtschaft (Transport Economy)*, München 1997, p.145f, and A. Boss, C.-F. Laaser, K.W. Schatz et al.: *Deregulierung in Deutschland (Deregulation in Germany)*, Tübingen 1996, p. 94s

¹⁵⁵ Boss et. al., op. cit., 1996

and were tied to subjective qualifications and not to market conditions. Private carriers do not need a registration, but are not allowed to pick up cargo on their way back from the customer to the factory¹⁵⁶. Thus, there remains a free capacity in the cargo transport system, which cannot be used due to regulation.

In the regulation of passenger transport there seems to be less pressure from the European Community. The license policy for passenger transport on lines parallel to the railway in favor of the railway have not changed.

As the market for transport with trucks has been extended to the whole European Community, the national limitations of the railways have become more recognizable. The railways are truly national organizations with national systems of

- power supply
- engines
- safety and signals
- rules of operations
- language of operations

So cross-border transports require a change of engines and of personnel, leading to hour-long waiting times. But there are major obstacles to introducing a Europe-wide safety and signal system along the tracks of 75,000 km as well as Europe-wide operating engines: This requires large investments of 6 billion Euros per year and an implementation period of nearly 30 years, with only small pay-offs for the national railway companies.¹⁵⁷ The General Direction for Energy and Transport at the Commission of the European Union recognizes that the railway only has a small timeframe of 5 to 10 years to establish a European system. Otherwise, it will become an unimportant player.¹⁵⁸

¹⁵⁶ BG, I, 1998, p. 1485 and K. Trinkhaus and R. Maiworm (Ed.): *Güterkraftverkehrsrecht (Legislation of Cargo Transport by Trucks)*, 4th edition, Berlin 1998, section B 102

¹⁵⁷ Deutsche Logistik Zeitung (*German Logistic Journal*), 31 August 2002.

¹⁵⁸ Deutsche Logistik Zeitung (*German Logistic Journal*), 11 February 2003

Appendix:

Name	Title	Place of Publication	Year
Krust, O.	Eisenbahn und Kraftwagen (Railway and Motor Vehicle)	Heidelberg	1929
Boelinger, Ferdinand	Die Spedition in ihrem Verhältnis zu Reichsbahn in der neuesten Zeit (Haulage in its current relation to the <i>Reichsbahn</i>)	Köln	1930
Dittebrand, Karl - H.	Eisenbahn und Kraftwagen in Deutschland (Railway and Motor Vehicle in Germany)	Göttingen	1931
Bäte, Fritz	Schienenverkehr und Straßenverkehr in Vergangenheit, Gegenwart und Zukunft (Rail and Road traffic in past, present and future)	Hannover	1933
Kallwass, Adalbert	Der Wettbewerb zwischen Eisenbahn und Kraftwagen im deutschen Güterverkehr (The competition between rail and road freight transport)	Greifswald	1933
Kröker, H.	Die Entwicklung des Kraftwagenverkehrs hinsichtlich der Gestaltung der Verhältnisse bei der Deutschen Reichsbahn (The development of motor vehicle transport with regards to the conditions of the <i>Deutsche Reichsbahn</i>)	Königsberg	1933
Bassel, Gerhard	Das Konkurrenzproblem LKW-Eisenbahnen (The problem of competition between Rail and Road)	Berlin	1934
Buschmann, Werner	Reichsbahn und Kraftwagen im Freistaat Sachsen (Railway and Motor Vehicle in Saxony)	Leipzig	1935
Piepenhagen, Günther	Die Stellung des gewerblichen Kraftverkehrs in der deutschen Verkehrswirtschaft (The Position of the Commercial Freight Transport in the German Economy)	Berlin	1936
Heimes, Anton	Die Tarifkontrolle im gewerblichen Güterfernverkehr mit Kraftfahrzeugen, unter besonderer Berücksichtigung der Frachtabrechnung durch den Reichs-Kraftwagen-Vertriebsverband (The Control of Prices in Commercial Long Distance Cargo Transport)	Frankfurt a. M.	1938
Jung, H.	Der Güterverkehr auf Lastkraftwagen, sein Umfang und seine Selbstkostenrechnung (Cargo Transport on Trucks and its Costs)	Frankfurt	1938
Vanicek, Rupert	Eisenbahn oder Lastkraftwagen ? Ein betriebswirtschaftlicher Vergleich der beiden Verkehrsmittel (Railway or motor vehicle? An economic comparison between the two means of transport)	Wien	1941
Sannwald, Werner	Schiene und Strasse im Güterverkehr (Rail and Road in the freight transport business)	Tübingen	1951
Bruns-Wüstefeld, U.	Die Konkurrenzsituation zwischen Schiene und Strasse (The competitive situation between rail and road)	Heidelberg	1953
Müller, Paul	Schiene - Strasse und Schiene - Schiffahrt (Rail - Road and Rail - Ship)	Tübingen	1953
Wüstenfeld, Ulrich	Die Konkurrenzsituation zwischen Schiene und Strasse (The competitive situation between rail and road)	Heidelberg	1953
Schrader, Albert	Die Aufgabenteilung von Schiene, Strasse, Luft (Rail and Road and Air)	München	1955
Zumbühl, Hans	Untersuchung und Ersetzbarkeit von Eisenbahnen durch schienenlose Verkehrsmittel (Examination and replaceability of railways by trackless means of transport)	Bern	1955
Freiling, Wolfgang	Das Wettbewerbsproblem Schiene - Strasse in Deutschland und Österreich (The problem of competition between rail and road in Germany and Austria)	Wien	1956
Huegel, Karlheinz-W.	Schiene-Strasse. Eine Untersuchung des Problems unter Berücksichtigung des Güterverkehrs (Rail and Road. An examination of the issue with regards to freight transport)	Graz	1956
Misselwitz, Arno	Der Wettbewerb zwischen Eisenbahn und Kraftwagen und die deutsche Verkehrspolitik (The competition between railway and car and the German traffic policy)	Basel	1956
Leimbacher, Eric	Das Verhältnis von Schiene und Strasse in der Schweiz (The relation of Rail and Road in Switzerland)	Tübingen	1957
Erdelmann, Alfred	Die Reglementierung des Güterkraftverkehrs als Ordnungsinstrument der Verkehrspolitik in der sozialen Marktwirtschaft (The regulation of freight transport as an organizational instrument of traffic policy in the social market economy)	Köln	1958
Peters, Hans-Rudolf	Der Verkehrsmarkt (The Market for Traffic)	Freiburg im Breisgau	1958
Erhard, Johann	Zur Problematik Schiene - Strasse in Westdeutschland (On the Problem of Rail and Road in West Germany)	Erlangen	1960
Rogmann, Rolf-Norbert	Verkehrspolitik und Konjunkturpolitik (Traffic policy and economic policy)	Köln	1960
Kirch, Eleonore	Die Neuordnung des Geldwesens, des Kreditmarktes und des Verkehrsmarktes der westdeutschen Wirtschaft nach der Währungsreform (The Reorganization of the Finance Sector, of the Market for Credits and of the Market for Traffic after 1949)	Marburg	1964
Schäfer, Eckhard	Die Koordinierung von Schiene und Straße im Güterfernverkehr unter besonderer Berücksichtigung der österreichischen Verkehrspolitik (Coordination of rail and road for long distance freight transportation with particular consideration of the Austrian traffic policy)	Köln	1965

Wagner, Gerhard	Strasse im österreichischen Güterverkehr. Das wettbewerbspolitische Problem Schiene-Strasse(Road in Austrian freight transport. The competitive political problem of rail and road)	Innsbruck	1968
Bentrup, Horst	Der europäische Kühlverkehr auf Strasse und Schiene (The European cooling transport on rail and road)	Freiburg / CH	1969
Frech, Bert	Im Güterverkehr der Bundesrepublik Deutschland. Zur Frage der Aufgabenteilung zwischen Schiene und Strasse (Freight transport in the Federal Republic of Germany. On the question of distributing responsibilities between rail and road)	Graz	1970
Keller, Heinz E.	Strasse im Güterverkehr. Die Funktionsfähigkeit des Wettbewerbs zwischen Strasse und Schiene (Road for freight transport. The workability of the competition between rail and road)	Zürich	1970
Sautter, Heinz	Der Güterverkehr auf Schiene und Strasse (Freight Transport by Rail and Road)	Tübingen	1971
Schalko, Helmut	Die Konkurrenz zwischen Schiene und Strasse (Competition between Rail and Road)	Wien	1973
Schlotterer, Peter	Die ordnungspolitischen Konzeptionen der deutschen Verkehrspolitik seit 1961 und ihre Auswirkungen auf die drei Binnenverkehrsträger (The political concepts of order of the German traffic policy since 1961 and their effects on the three means of inland transportation)	Berlin	1973
Ploog, Helmut	Die Förderung der Kooperation zwischen Strassengüterverkehr und öffentlicher Eisenbahn als Instrument rationaler Verkehrspolitik (The promotion of the cooperation between road transport and public railway as an instrument of rational traffic policy)	München	1975
Peter, Gisela	Steuerwirkungen der interventionistischen Verkehrspolitik in der Güterfernverkehrsunternehmung (Taxation effects of the interventional traffic policy in the enterprise of long distance freight transport)	Köln	1977
Kunowski, Jan von	Ordnung des Wettbewerbs und Wirtschaftslenkung in der verkehrspolitischen Gesetzgebung - Grundlagen der Verkehrswirtschaft im deutschen und europäischen Recht (The order of Competition and the Control of Economy in the legislation of traffic Policy)	München	1978
Walcher, Frank	Das Planungs- und Steuerungssystem der staatlichen Verkehrspolitik zur Regulierung der Verkehrsmärkte (The planning and taxation system of the governmental traffic policy for regulating traffic markets)	Berlin	1978

Table 6: German-language Dissertations in the field of the German doctrine of the peculiarities of cargo transport economics. Sources: Dissertation Index of German Universities 1950-1970, Hessian Library System www.HEBIS-Retro.de, Rohde, 1999, op. cit., Laaser, 1997, op. cit.

Zur wirtschaftlichen und rechtlichen Organisation der deutschen Seehäfen / Hermann Haemmerle. - Jena : Fischer, 1936
Die Monopoltendenz des Kapitals im Spiegel der Verkehrsmittel / Kurt Wiedenfeld. - Jena : Fischer, 1937
Stand und Aussichten des gewerblichen Güterfernverkehrs mit Lastkraftwagen / Institut für Konjunkturforschung <Berlin>. - Jena : Fischer, 1937
Nationale Verkehrsplanung : sechzig Länderuntersuchungen ; Die Hauptstadt als Verkehrszentrum ; Theorie der nationalen Verkehrsplanung / Sven Helander. - Jena : Fischer, 1937
Haltungskosten von Personenkraftfahrzeugen : bearb. im Institut für Konjunkturforschung ; abgeschlossen im April 1938 Jena : Fischer, 1938
Die Verflechtung von See- und Binnenschifffahrt / Paul Schulz-Kiesow. - Jena : Fischer, 1938
Binnenschifffahrtspolitik der Niederlande : (Studien zur Verkehrswirtschaft der Niederlande, I.) / Anton Felix Napp-Zinn. - Jena : Fischer, 1938
Der Seeverkehr der deutschen Binnenhäfen : unter besonderer Berücksichtigung der Rhein-Seeschifffahrt und der Betätigung der Küstenfahrer im Seeverkehr des Elbe-Oder-Gebietes / Paul Schulz-Kiesow. - Jena : Fischer, 1938
Die Verflechtung von See- und Binnenschifffahrt / Paul Schulz-Kiesow. - Jena : Fischer, 1938
Der Werkverkehr mit Lastkraftwagen : Umfang Aufgaben und Voraussetzungen für seine Betätigung (eine Strukturuntersuchung) Jena : Fischer, 1939
Der Wettbewerb in der Seeschifffahrt Jena : Fischer, 1940
Die Fernsprechtarife der Welt und ihre Grundlagen : bearb. im Institut für Konjunkturforschung / Wolfram Boesser. - Jena : Fischer, 1940
Gestaltung und Wirtschaftlichkeit der Land-, Wasser- und Luftfahrzeuge / Friedrich Neesen. - Jena : Fischer, 1940-
Die durchgehenden Eisenbahn-Seefrachttarife : Beitrag zur Frage der organisatorischen Verflechtung von Eisenbahn und Seeschifffahrt / Paul Schulz-Kiesow. - Jena : Fischer, 1941

Table 7: Mitglieder und Veröffentlichungen des Verkehrswissenschaftlichen Forschungsrates beim Reichsverkehrsministerium 1936-1941 (*Members and Publications of the advisory board 1936-1941*)
Sources: State Library, Berlin, Transport Minister (Ed.): 50 Jahre wissenschaftlicher Beirat (*50 Years of Scientific Advisory Board*), Bonn 2002

Abbreviations:

ADAC: Allgemeiner Automobilclub Deutschland – General Auto Club Germany
BA: Bundesarchiv, Berlin – Archive of Federal Republic of Germany
BG: Bundesgesetzblatt -official gazette of Federal Republic of Germany
DM: Deutsche Mark
Rpf 0,01 RM
RG: Reichsgesetzblatt - official gazette of the Reich
RKB: Reichs-Kraftwagen-Betriebsverband - Council of Truck Operators
RKT: Reichskraftwagentarif - the Reich tariff for motor vehicles
RM: Reichsmark

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