Type of cost	CT rail-road
	Share
Forwarder's margin	2.9%
Total cost forwarder	**100%**

Source: KombiConsult

4.1.11. Use case 10: Bönen-Södertälje

The use case 10 concerns the transport of steel coils between Germany and Sweden with a craneable, curtainside semi-trailer. From the point of loading in Bönen (DE) the semi-trailer is hauled about 100 km westwards to the CT terminal Duisburg-Hohenbudberg, notably "against the direction of the freight". Like in the first four cases there are two alternative supply chains. In the case of a CT rail/road operation the intermodal train would be running through to Södertälje except for stops to change locomotives and/or drivers. The second option is a CT rail-sea-road operation. It is composed of two domestic rail journeys in Germany and Sweden, respectively, and a ferry trip across the Baltic Sea. The final road leg from the CT terminal in Södertälje to a car manufacturer only amounts to about 5 km (see Table 98).

Table 98: Use case 10 – CT supply chains

Combined transport rail-road	Combined transport rail-sea-road
Initial road leg Bönen-Duisburg	Initial road leg Bönen-Duisburg
Road/rail transhipment at CT terminal Duisburg DUSS	Road/rail transhipment at CT terminal Duisburg DUSS
Rail transport Duisburg-Hamburg (single-system Loco DE)	Rail transport Duisburg-Lübeck SK (single-system Loco DE)
Rail transport Hamburg-Malmö (multi-system loco)	Rail/ferry transhipment at port of Lübeck SK
Rail transport Malmö-Södertälje (single-system Loco SE)	Ferry transport Lübeck-Trelleborg
Rail/road transhipment at Södertälje CT terminal	Ferry/rail transhipment at port of Trelleborg
Final road leg Södertälje area	Rail transport Trelleborg-Södertälje (single-system Loco SE)
	Rail/road transhipment at Södertälje CT terminal
	Final road leg Södertälje area

Source: KombiConsult

Table 99: Use case 10 – cost structure of the rail carrier in CT operations

Type of cost	CT rail-road	CT rail-sea-road
	Share	Share
Depreciation cost of locomotives	4.5%	4.3%
Depreciation cost of wagons	4.5%	6.0%
Financing cost of locomotives	1.4%	1.3%
Financing cost of wagons	1.0%	1.4%
Maintenance & repair cost of locomotives	6.2%	5.8%
Maintenance & repair cost of wagons	4.8%	6.5%
Shunting and pushing services cost	3.3%	5.1%
Track access cost	26.2%	20.4%
Energy cost	20.8%	20.2%
Personnel cost rail carrier	12.0%	13.7%
Insurance cost	0.6%	0.6%
Overhead rail carrier	12.8%	12.8%
Rail carrier's margin	2.0%	2.0%
Total cost rail carrier	**100%**	**100%**

Source: KombiConsult

The rail carrier has to calculate with costs more than 35% higher for a CT rail-road operation compared to a CT rail-sea-road transport chain. It is surprising that the breakdown by cost types does not vary considerably between both supply chains. The most striking differences refer to track access costs, which have a 6 percentage-points smaller share in CT rail-sea-road operations, and the increased costs for the employment of CT wagons in the same supply chain (see Table 99).

The forwarder that selects the CT rail-road service has 8.8% lower costs compared to the CT rail-sea-road variant. Here the transport costs by rail and road have almost the same scale 30.5% vs 34.8%, respectively. Due to multiple handlings at inland and ferry terminals the transhipment costs account for a top 9.1%. As concerns the CT rail-road service the rail operation is the largest cost component accounting for 44.9% of the total forwarder's cost, whilst the road legs make up just 37.9% (see Table 100).

Table 100: Use case 10 – cost structure of the forwarder in CT operations

Type of cost	CT rail-road	CT rail-sea-road
	Share	Share
Average rail cost	44.9%	30.5%
Terminal handling cost	5.8%	9.1%
Initial and final haulage costs	37.9%	34.8%
Cost of ferry transport	0.0%	12.9%
Equipment cost (depreciation/leasing)	3.6%	5.0%

Type of cost	CT rail-road	CT rail-sea-road
	Share	Share
Personnel cost forwarder	0.3%	0.2%
Overhead forwarder	4.6%	4.6%
Forwarder's margin	2.9%	2.9%
Total cost forwarder	**100%**	**100%**

Source: KombiConsult