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Market analysis for shifting goods from road to rail by means of combined transport in Germany

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Introduction

Up to 60% CO₂ could be reduced due to the use of rail instead of road on the analyzed relations (UIRR, 2003)



But not every truck transport can be shifted to the rail
and there isn't said how much potential exists

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Introduction

Market analysis for shifting goods from road to rail

Questions of this
paper

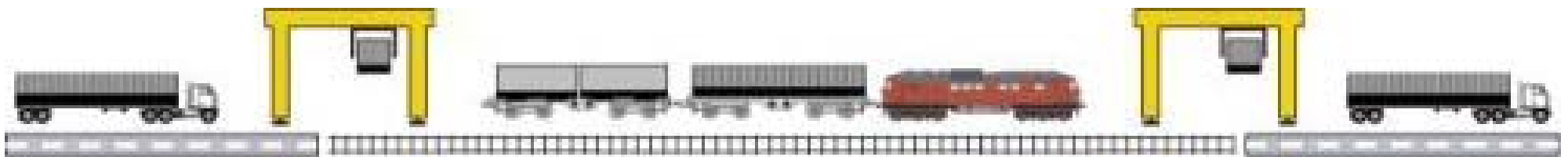
- » Which kind of transports
 - » can be shifted from a **technical and logistical point** of view?
 - » are realistic and attractive to shift from an **economical point** of view?
 - » How can they be **categorised**?
- » What is the **maximum** potential in the case of Germany?

Rail freight transport

Very low amount of firms have work sidings for direct loading of train wagons:

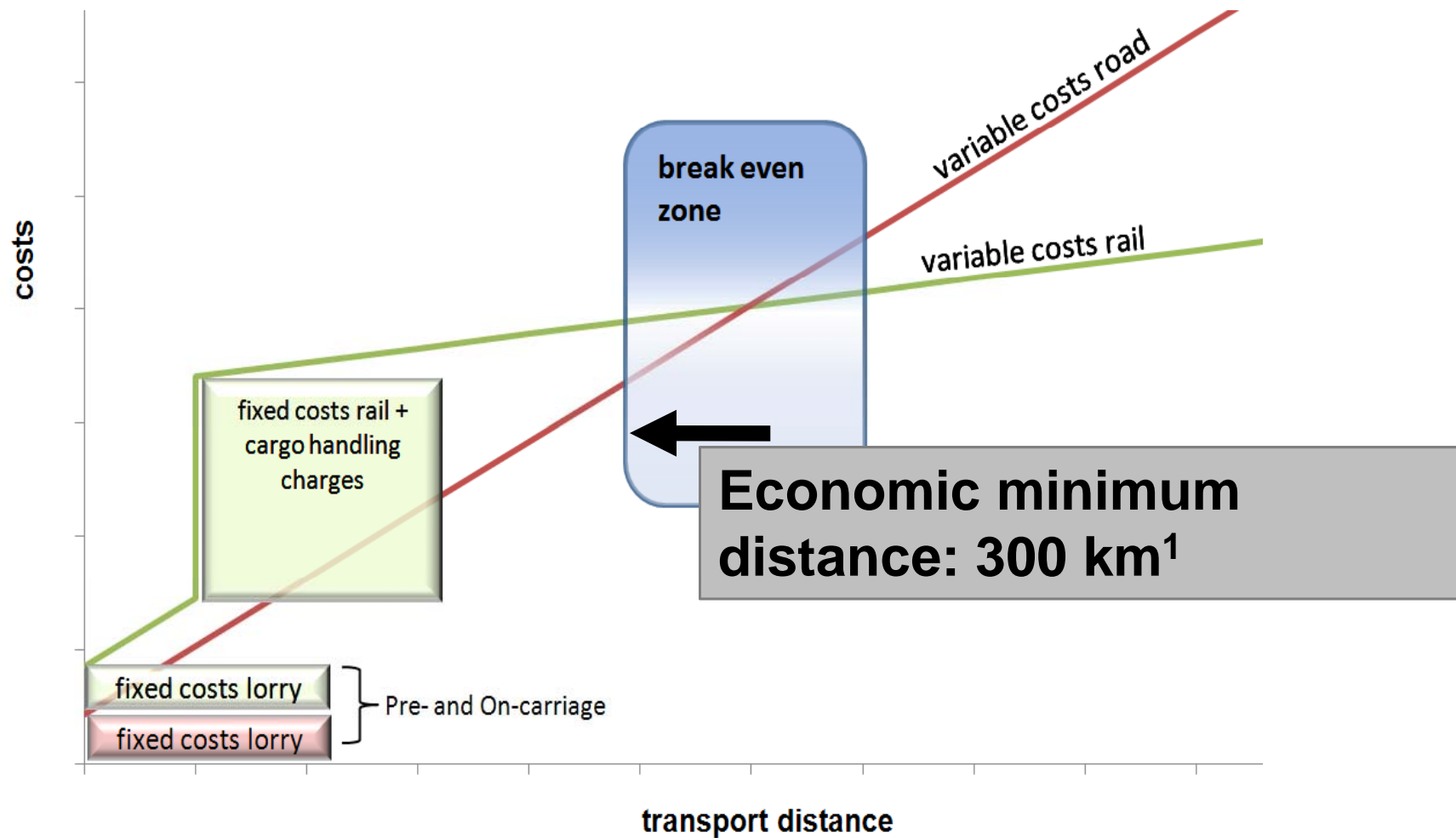
According to Bruckmann (2006) only 2% of transport routes have work sidings on both sides

- » „conventional“ rail transport is not possible for most transports
- » Only alternative: combined transport (CT)



(UIRR, 2009)

Economic point of view – example distance



¹Source: Frindik, 2007; Gudehus, 2000; Reim, Uwe, 2007; Statistisches Bundesamt, 2008; 2007; 2006; 2005; Vahrenkamp, 2005

Technical point of view

Combined transport is only possible with following suitable types of boxes:

Container, swap body and semi-trailer (special strengthened)



Goods transported by truck and their suitability for CT boxes

- | | |
|-------------------------------|--|
| 1. Container, swap bodies: | no change of transport box |
| 2. Palletized, bundled goods: | small adjustment of transport boxes |
| 3. Bulk and special goods: | max. 80% shiftable technically in CT transport boxes |

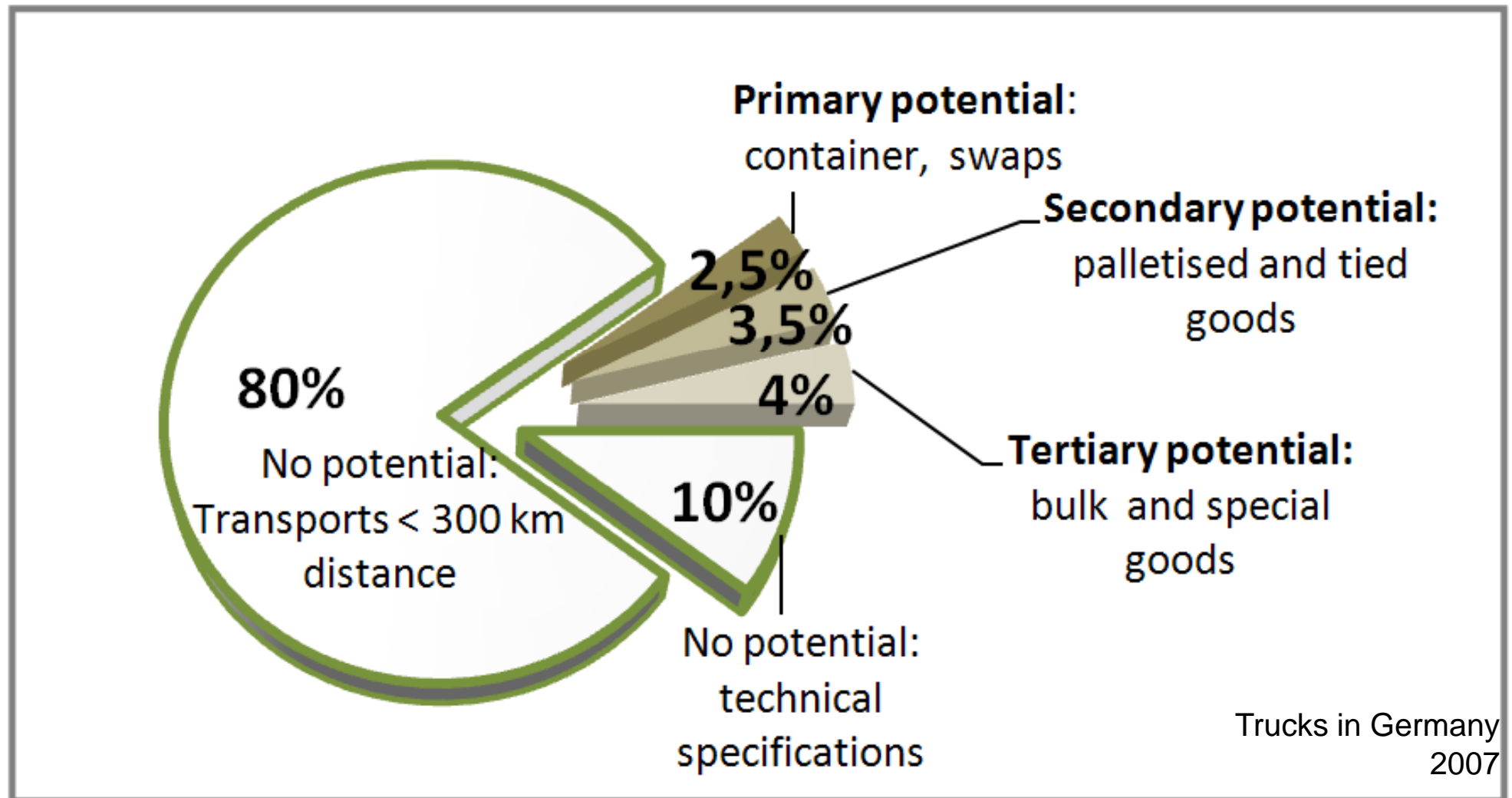
Levels of potential

Aspect Level	Definition	Technically	Logistically	Economically	Investment	Time frame
Primary potential	all container and swap bodies >300 km transport distances	no change of transport box	no change of loading process at the firms	possible > 300 km transport distance	none	short
Secondary potential	all palletized and tied goods >300 km transport distances	adjustment of transport boxes	small/ no changes of loading process	-"-	small	middle
Tertiary potential	80% of bulk and special goods >300 km transport distances	max. 80% shiftable technically in CT transport boxes	Reorganisation of loading process at the firms	-"-	middle	long

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German truck transports potential to shift to CT

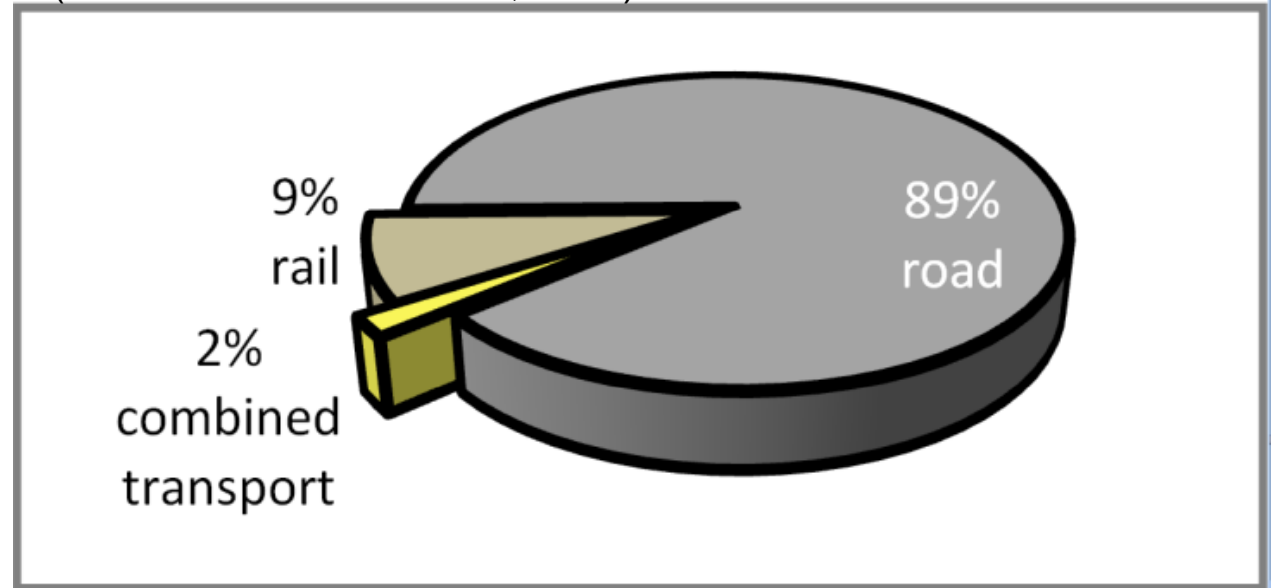


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Theoretical potential increase of CT

Share of land based transport modes in Germany 2007
(cf. Kraftfahrt-Bundesamt, 2008)



Combined transports 2007

+ Primary potential = Increase + 53%

+ Secondary potential = total increase +189%

+ Tertiary potential = total increase + **403%** (= 25 Mio. Trucks)

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Summary

- » Combined transport is the only possibility for most companies to transport with CO₂ friendly train.

In the case of Germany

- » absolute maximum shifting potential results in **10%** (= 25 Mio truck transports) of the current truck transports
- » This means **five times** more traffic on combined transport than at present.