



A Very Long Term Forecast

for the development of the Cargo Flows
in the Le-Havre – Hamburg range (LHR).
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Part of the project: **“The very long term development of the Dutch Inland Waterway System”** for Rijkswaterstaat.

Background

Rijkswaterstaat (RWS) is responsible for the development and maintenance of the Dutch Inland Waterway System. Most of the hydraulic infrastructure have an expected lifetime of about 80-100 years. One-by-one substitution will be like:

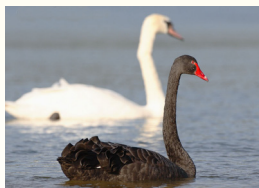
“Replacing all parts of an old car and delivering a good as new old timer”.

Rijkswaterstaat now desires to develop a proactive replacement strategy that takes the possible developments over the lifetime of the hydraulic infrastructure into consideration. This requires insight in port related cargo flows in the LHR.

Methodology Applied

- Investigate relation between port throughput and the development of the hinterland economy (GDP).
- Develop a probabilistic forecast for the population and economic development of the hinterland region.
- Develop a probabilistic forecast for the development of the cargo flows in Le-Havre—Hamburg range.
- It is not possible to make a sound forecast, but it is possible to provide a reasonable order of magnitude estimate.

BE AWARE
OF TREND
BREACHES !!!
(or Black Swans)



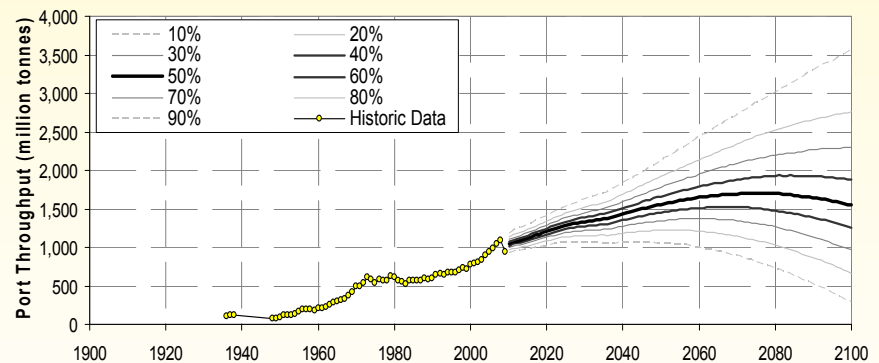
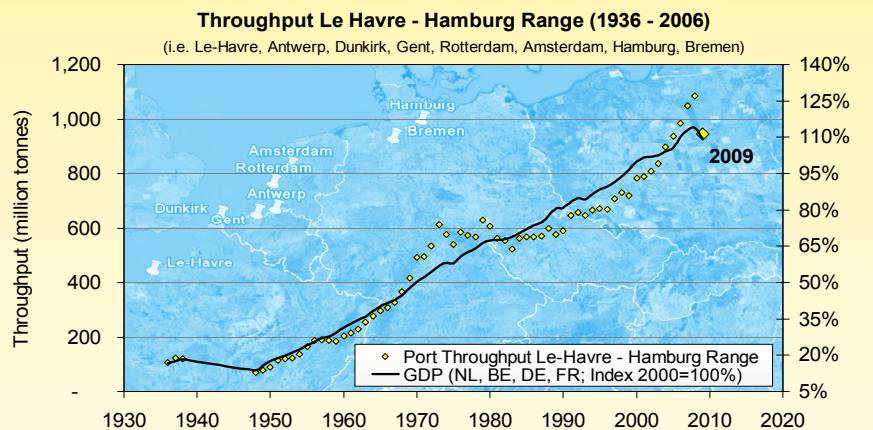
1920



2010



What will the world look like in the year 2100?



Throughput volumes likely to increase by a **factor 1½ to 2** over the next 70 years and will likely stabilize or decrease thereafter. *Forecast should be regarded as an order of magnitude estimate rather than a sound forecast.*

