Maritime Strategies International Ltd.

Shipbuilding Service (SHIPS)

Table of Contents

Maritime Strategies International Ltd
2 Baden Place, London SE1 1YW
T: +44 (0) 207940 0070 F: +44 (0) 207940 0071 E: info@msiltd.com Web: www.msiltd.com

I. Introduction

MSI's Shipbuilding Service (SHIPS) is a fully interactive, menu-driven modelling system, forecasting newbuild contracting volumes and prices across all shipping sectors. It is a highly effective support tool for shipyards, industry suppliers and shipowners and provides:

- MSI's **Comprehensive database** of the shipbuilding market of almost 1,000 historical and forecast timeseries from 1980 to 2020, updated every quarter to MSI's latest forecast scenario.

- A **Market Analysis and Forecasting Model** built on sophisticated econometric equations and explicit macroeconomic and industry assumptions, enabling users to generate alternative forecast scenarios based a wide range of macroeconomic, supply and shipyard cost variables and to test the sensitivity of MSI's quarterly Base Case scenarios to key market risks.

Along with our quarterly scenario updates, MSI provides our in-depth SHIPS market report to support our data adjustments, detailing the latest shipbuilding industry developments.

II. Data Coverage and Sources

The SHIPS provides historical and forecast timeseries data from 1980 to 2020 for:

- Macroeconomic variables including:
  - Annual GDP growth rates by region
  - Industrial production
  - Inflation and interest rates

- World Seaborne Cargoes including:
  - Crude oil and refined products
  - Liquid chemicals and liquefied gases
  - Dry bulk commodities
  - Other dry cargoes (General Cargo and Refrigerated)
  - Passenger (Cruise) and RoRo Trade

- Newbuilding demand and fleet data by vessel type:
  - Contracting
  - Orderbook
  - Cancellations, Slippage and Deliveries
  - Scrapping
  - Fleet size

- Shipbuilding Capacity and Global Yard Operating Rates

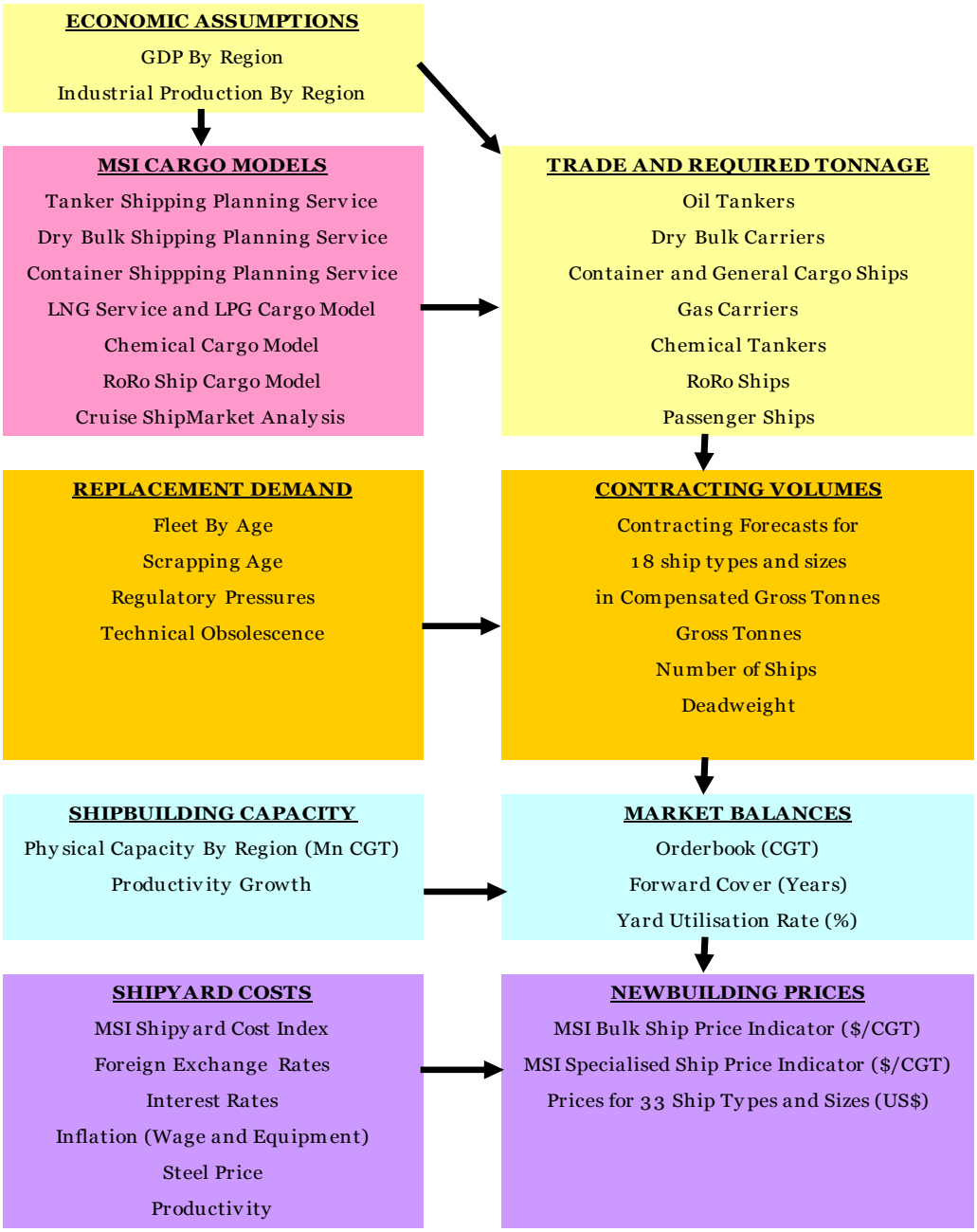
- Shipyard cost data in local currency and US$ units:
  - Wage inflation, equipment cost inflation, productivity growth
  - Exchange rates, interest rates and steel prices

- Newbuilding prices:
  - MSI's proprietary index of bulk and specialist newbuilding prices ($/CGT)
  - 39 representative ship types and sizes cover all shipping sectors

Newbuilding demand and fleet data are available in Compensated Gross Tonnes, Gross Tonnes, Deadweight Tonnes and Number of Units.

III. Model Structure

Below is a schematic overview of the Shipbuilding Service model structure.



MSI's Base Case demand forecasts for incremental and replacement newbuilding requirements are estimated from:

1. Explicit cargo and passenger traffic forecasts
2. Fleet age and scrapping profiles

Both are based on the macroeconomic and scrapping assumptions used in MSI's specialist services for each sector (see our website for further details on our sector models). The tendency for orders to be clustered in strong freight markets is fully captured using supply and demand forecasts for all the major shipping sectors. These are also consistent with MSI's specialist services.

Indicative yards costs and capacity are forecast by major building region. They are grounded on explicit assumptions both for macroeconomic (wage and manufacturing inflation, interest and US$ exchange rates) and specific industry variable (yard productivity and subsidies).

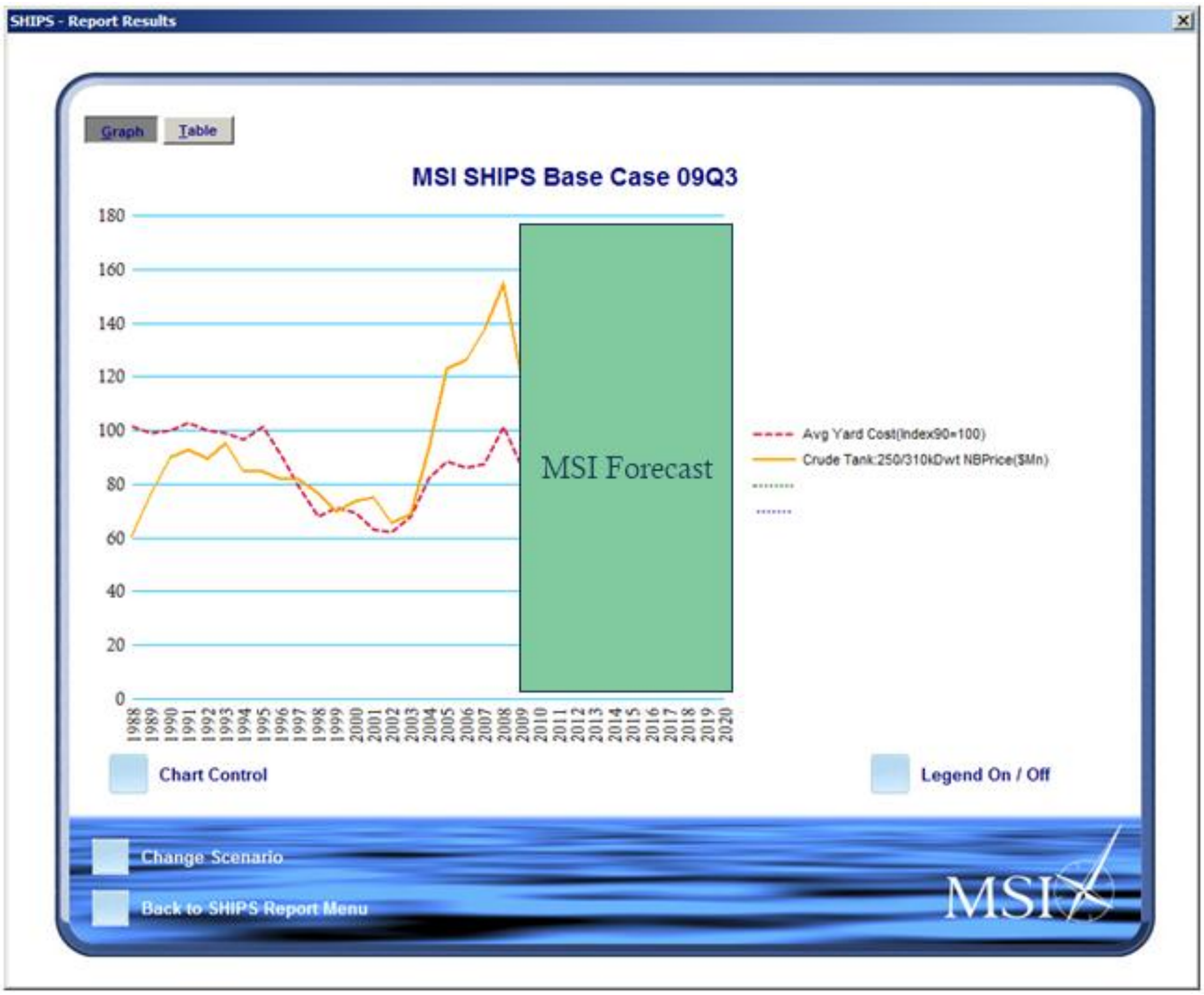
Based on the newbuilding demand, cost and capacity forecasts, SHIPS estimates the overall balance between global demand and supply and the forward cover of yard orderbooks. This is the critical input into the model's forecasts of yard profitability and mean price/cost mark-up.
A wide selection of variables are available for modification by the user including GDP growth, commodity prices, regional refinery capacity, infrastructure constraints, fleet productivity, operating costs and vessel supply responses.

The SHIPS model allows the user to modify and simulate alternative scenarios to the MSI Base Case.

Once an alternate simulation is complete this can be saved and then compared with either the MSI Base Case or another alternative scenario created by the user. Comparisons of variables can be made either graphically or in table format. The model also incorporates a step-simulation function allowing the user to view how a change in any given variable cascades through the layers of the model and ultimately affects market balances.

IV. Sample Screenshot

The user is able to compare the dynamics of different variables. The screenshot below shows this functionality for two variables used within the model to analyse the shipbuilding market.



V. Deliverables

A Shipbuilding Planning Service package can include a combination of the following:

- Modelling software
- Quarterly Market Reports
- Reference Guide
- Equations Book
- Full telephone support and access to our senior consultants

Each quarterly model update is supported by a comprehensive written report containing extensive analysis and industry insights on the international economic environment, cargo trends, fleet developments, shipbuilding price developments and forecast sensitivities. The report also provides reasoning behind our Base Case forecast as well as any changes made to it. Detailed data extracts from SHIPS are included in each report.

The Reference Guide provides detailed instructions on set up, installation and use of Shipbuilding Planning Service software, a description of the forecast methodology and a complete listing of data sources.

SHIPS is written on a Microsoft Excel® platform, and updates containing MSI's latest forecasts are distributed quarterly via an easily installable Microsoft Windows® installation package.