

economic, political and environmental issues

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1: OUR BUSINESS IS FACING GLOBAL AND LOCAL UNCERTAINTIES



Economic & political factors – economic growth drives trade which funds new and expanded port investment. Politically, the world looks much more uncertain than for many years. Trade has ridden on globalisation, will this model change?



The environment – a critical path for port development. As economies recover, attention focuses again on this sector



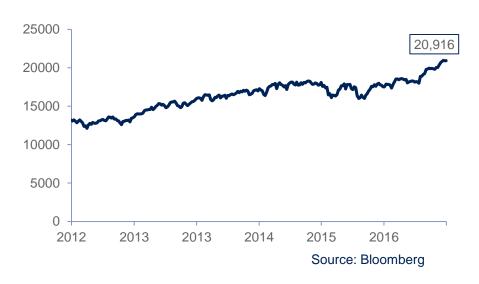
Technical change – responding to evolving market needs (automation, vessel sizes, etc.)

What can the port industry expect from all of this?



1.1: MACRO-ECONOMY - CONFIDENCE IS THE KEY

Dow Jones Industrial Avg.



- Growth has been strong since Brexit and the Presidential election – are we in a 'Phoney War'?
- Uncertainties and confidence both increasing a paradox
- China has driven commodity and trade demand uncertainty here may be the most significant factor
- EU looking very problematic no end to the Euro Crisis in sight
- What will happen with Trade Agreements?
- Next six months to shape the medium term outlook

Shanghai SE 50 index



- Billion dollar projects still determined by (very) short term considerations
- Actual demand is strong, but major projects on hold on a 'wait and see' basis
- Major uncertainty on the direction of trade
- Project bankability very difficult for large projects



1.2: MARKET UNCERTAINTIES - COMMODITY PRICES ROLLER COASTER

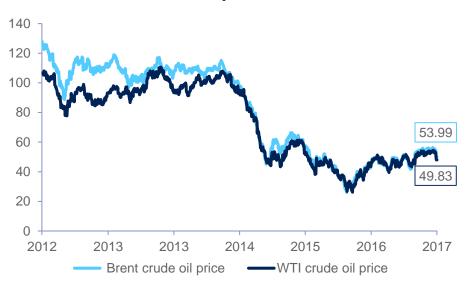
Spot Market Iron Ore Price Index (fines)



Source: Bloomberg

- Direct result is massive uncertainty in commodity prices
- Very difficult to forecast and justify new developments in this climate
- But position is complex:
 - Major dry bulk projects great uncertainty
 - Containers still strong (but slowing)
 - Liquids increased demand / reorientation

Brent & WTI Crude Oil Spot Prices



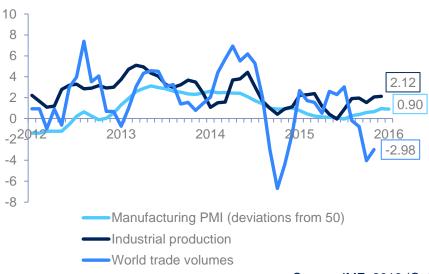
Source: Bloomberg

- Continued strong interest in container terminal investment and improvement (global)
- Limited dry bulk investment
- Oil/products and chemicals increased storage demand and trading – new export terminals
- Generally, the focus is on margins not expansion (getting more from existing investments)



1.3: MACRO ECONOMIC OUTLOOK - QUO VADIS?

World Trade, Industrial Production, and Manufacturing PMI - (three-month average; annualized per cent change)



Source: IMF, 2016 (Oct)

- Macro economic outlook is now much more uncertain
- Chinese pressures have been mounting for some time. IMF projections are suspect
- Demand remains weak high political risks
- Very difficult to finance some projects in this situation

World GDP Projections - IMF

	2016	2017F	2018F	2021F
us	1.6	2.3	2.5	1.7
Euro Area	1.7	1.6	1.6	1.5
China	6.7	6.5	6.0	6.8
Developing Asia	6.3	6.4	6.3	6.4
Latin America/Caribbean	-0.7	1.2	2.1	2.7
Middle East	3.8	3.1	3.5	3.6
Sub-Saharan Africa	1.6	2.8	3.7	4.2
World	3.1	3.4	3.6	3.8

Source: INF, 2017 (Jan)

- Most recent data from IMF stresses recovery in US but Euro Area uncertain
- But looks shaky for southern Europe and especially for China – significant revision to forecast anticipated
- Anticipate reduction in China GDP forecasts to 3.5-4%?
- Middle East some recovery in growth
- Commodity exporters still reeling



1.4: IMPACT ON THE PORT BUSINESS

M&A activity is still high – financial institutions continue to chase the port sector, with high bids for established operations, but interest has slowed

M&A driven by shipping line fire sales in the container sector

Big player uncertainty – majors:DPW, Hutch continue to invest, APM static, smaller players increasing market activity (ICTSI, Yildirim, OHL, etc.)

Greenfield commodity projects are much more difficult to finance than three-four years ago

New money coming from Chinese investors – often for 'political' not 'commercial' reasons ('Silk Road' strategy)

Making the most of existing investment is central strategy for terminals

Lower margins forecast for terminal operations in general

Focus on reduced costs – automation, etc.

Niche markets are very important –
e.g. cement carriers, liquid storage
(increased trading demand), LNG
bunkering, cold ironing

Much tougher environment with concentration of terminal investment in fewer, much larger, organisations



INTERRUPTED GROWTH

Short term upheaval in trade followed by pragmatic policy adjustments. This is a more volatile outlook, but has the potential for a rapid bounce-back

BUSINESS AS USUAL

We have had many years of globalised growth and this has driven port investment. This was already slowing by early 2016. Some further slowdown anticipated in the container trades. Rebalancing of markets to slower demand growth

3

PROTECTIONISM

Seems more likely than for many years. Import tariffs will directly hit container flows, with limited stimulus to domestic demand. Under these conditions reciprocal moves seem certain. Will force a readjustment on shipping and ports

You pay the money and make your choice
Long term cost of protectionism will be too high, but political gestures
unavoidable. Today 'Interrupted Growth' is the favourite.



1.6: FINANCING PROJECT DEVELOPMENT – NEW CHALLENGES



Projecting demand and project revenues – much more difficult in this situation. Modelling scenario risk is central to the process



Bankers looking to reduce risks – equity shipping line involvement increasingly sought after (but counterparty risk remains)



Greenfield projects – except with cargo interest support – are very difficult



Attention now focusing on modernisation of existing facilities in terms of marketing (terminal combinations) and operations (automation, cost reduction)



Flight to quality' marginal projects are off the agenda



2.1: INTRINSIC FACTORS – MAJOR CHALLENGES

SHIP SIZE DEVELOPMENT

- Ship size development a major driver of port development and still underway
- Not just a matter of vessel handling but also much larger consignment sizes

TERMINAL AUTOMATION

 Terminal automation – this is the focus for container terminals. Well advanced in Europe – now developing in North America

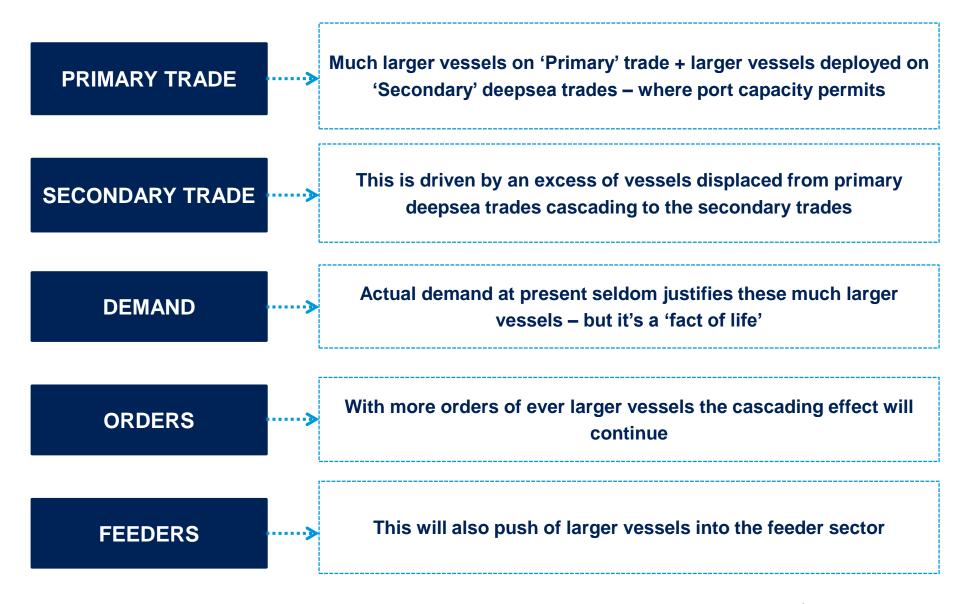
PANAMA CANAL

Panama Canal expansion fallout still not certain – possible revitalisation of All-Water services?





2.2: SHIP SIZES – A REVOLUTION IS UNDERWAY





2.3: SHIP SIZES – A REVOLUTION IS UNDERWAY

8,000 TEU to 14,000 TEU

14,000 TEU to 18,000 TEU

18,000 TEU to 22,000 TEU



E Class Maersk: 397m, 22 rows, 16m

- Ports around the world were sized to accommodate the E class Maersk by providing 16m of draft.
- Cranes were upgraded to 22 rows



Triple E Maersk: 400m, 23 rows, 16m



- Cranes were extended to 23 rows
- No change required for berth or channel drafts
- Could be a step too far?
- Berth length should be able to accommodate but cranes would need 24 rows and deeper draft

Ports have adjusted as the increases were incremental. The next size of container vessels could result in significant capacity redundancy.

Berth length, turning circle, draft and air draft are critical



2.4: TERMINAL AUTOMATION

- Container terminal automation well advanced at the global level
- Driven (and constrained) by labor issues
- All major new terminals are utilising automated systems – to varying degrees
- Very difficult to retrofit these systems and best suited to optimum layouts
- At present, productivity of automated terminals is little better than best practice in conventional facilities
- This will change in the near term and become essential for handling the largest vessels and consignment sizes



All high volume container terminals will look like this in the future



3.1: ENVIRONMENTAL ISSUES CURRENTLY FACING PORTS

Permits, Consents

NIMBY, Urban Encroachment

Management

PERS, ISO14001

Resiliency

Tides, Storms, Surges, Floods

Noise, Vibration, Light

Cranes, Trains, Beepers

Emissions

CO2_e, NOX, DPM₁₀

Health & Safety

Workers, Truckers, Staff

Habitats

Fish, Birds, Mammals

ENVIRONMENT

It's not easy being green

Water Quality

Spills, Runoff, Groundwater

Public Access

Parks, Trails, Bicycles

Waste Management Trash, Dunnage, Hoteling

Hazardous Materials

Proximity Risks, Responses

Cultural Resources

Indigenous, Architecture



3.2 THE FUTURE READY SPACE...



3.3: WHAT IS TOPICAL? OUR CLIENTS ARE TALKING ABOUT...



4.1: CONCLUSION & TAKE-AWAYS



Macro-economic & political risks:

- Outlook very unclear wide range of possible scenarios will make funding for development difficult to secure
- Danger of protectionism a direct threat to trade and port volumes
- %

 What happens when interest rates rise? – potentially lower growth and more expensive investments



'Industry risks' (and opportunities):

- Ship size increases major driving force in containers
- Cascading of larger vessels pressures smaller terminals
- Need for terminal productivity improvements and automation
- Making better use of existing port investments



ENVIRONMENTAL RISKS

- Environmental pressures shoreside power, emissions, green terminal development, and climate resilience, etc.
- Need to adopt (and define) best practice a lot to learn from different regional systems and other sectors (e.g. innovation in construction and rail)



THANK YOU

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