



Beyond COVID-19 - Ports & Supply Chains re-Imagined?

Jonathan Beard - Infrastructure Advisory Partner

**Accelerating Malaysia's Economic Recovery
Through a Resilient Port & Logistics Sector**

Transport Events - Webinar, 23 July 2020

EY

Building a better
working world

When trade growth returns will it be 'Business as Usual' or significantly more diversification, near-shoring and / or re-shoring?

When do you expect global economic growth to return? (May 2020)

- 12% By the end of 2020
- 32% In the first half of 2021
- 41% In the second half of 2021
- 15% Only in 2022

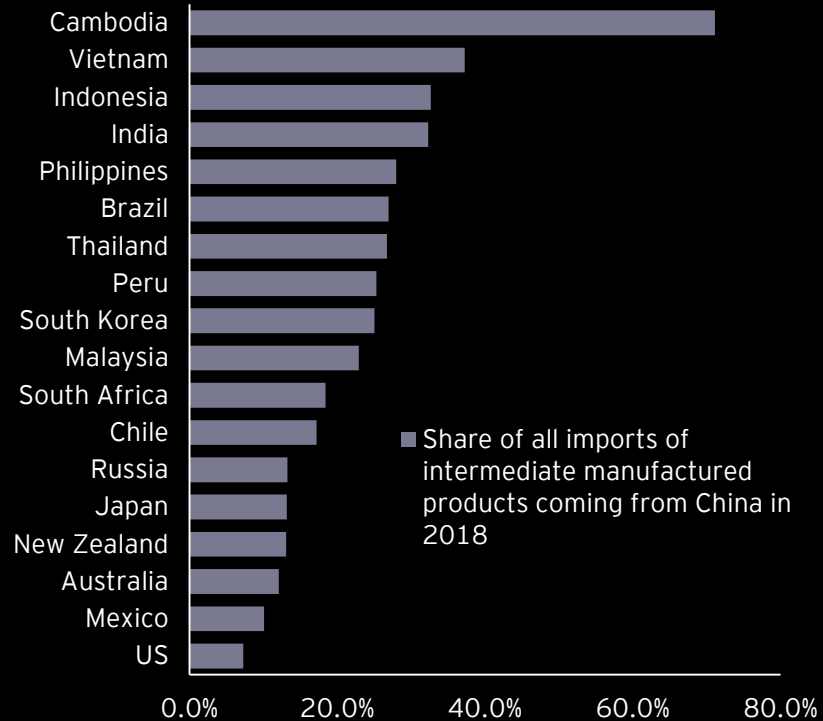
EY Webcast NextWave Global Trade Survey
~1,700 respondents

How do you expect global supply chains to restructure? (May 2020)

- 14% No significant geographical restructuring
- 52% Significant geographical restructuring, with increased near-shoring and multi-sourcing
- 34% Significant geographical restructuring, with re-shoring and multi-sourcing

EY Webcast NextWave Global Trade Survey
~1,700 respondents

Asian factories are especially dependant on PRC production



Source: World Integrated Trade Solutions, World Bank

64% of North American manufacturers say reshoring is likely following Pandemic
28% of manufacturers *extremely* likely to bring more production and sourcing back to North America

April 20 Survey of 878 North American manufacturing and industrial sector professionals (Thomas Survey)

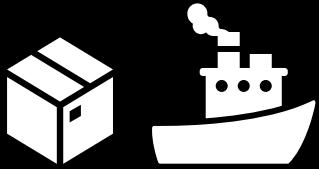
China's production base plays a critical role in global supply chains - how easily can this be replaced?

- ▶ Pre COVID-19, the pace of globalisation and trade liberalisation was slowing
- ▶ US-China trade 'war' has introduced further threats...and opportunities (for certain countries, e.g. Vietnam)
- ▶ "Industry 4.0" and advances in robotics (e.g. "sewbots", etc) have driven *some* re-shoring and near-shoring
- ▶ Will this become widespread and / or will supply chains become more diversified (i.e. more Asia sourcing outside PRC)?
- ▶ China's scale and quality of logistics infrastructure cannot be easily supplanted.
- ▶ Since Q3 2019, PRC focus on Blockchain and other digital technologies to enhance security, visibility and resilience of its supply chains - demonstrate best in class.
- ▶ What are the cost implications of supply chain restructuring and are consumers **willing to pay?**

40% of Americans say they won't buy "Made in China"
78% of Americans say they are willing to pay more for products if companies that make those goods move their manufacturing plants out of China

FTI Communications Survey, May 20 Online, 1,012 respondents

"NOW", "NEXT" & "BEYOND" - Shipping Lines



- ▶ Lines storing 'storing' laden containers at their transshipment hubs, to avoid build-ups at final import destinations
- ▶ Possible imbalance of equipment - empty containers left 'stranded' at import locations
- ▶ Blank sailings and reduced capacity via lay-ups
- ▶ Alternative routings: e.g. Cape of Good Hope bypass Suez - low bunker and reduced demand
- ▶ Lower bunker prices should ease opex costs, but the collapse in demand and surplus capacity pose major challenges
- ▶ Many shipping lines were already financially stressed before the Covid-19 outbreak (due mainly to substantial capacity overhangs)
- ▶ Shipping lines will heighten their drive to reduce unit operational costs, through better network planning, reduced terminal & port charges and improved port productivity
- ▶ IMO 2020 has also forced shipping companies to reduce Sulphur emissions and improve sustainability, but has driven up liners' costs
- ▶ As weaker lines struggle to ride out the storm, M&A may pick-up
- ▶ However, constraints on financing may work against further acquisitions
- ▶ Even the financially stronger lines remain at risk
- ▶ Without surety of demand growth, taking on further capacity may be unappealing...
- ▶ ...and surplus capacity has bedeviled the liner industry over the last 15 years
- ▶ Will lines re-consider the continued push towards larger - and less flexible - container vessels?
- ▶ Will lines re-consider their environmental strategies?



Do you believe that the impact of COVID-19 will cause a rethink around mega-vessels?

68% YES

32% NO

EY Webcast NextWave Global Trade Survey
May 20: ~1,700 respondents

Will COVID-19 increase the drive of ports and shipping to reduce their environmental footprint?

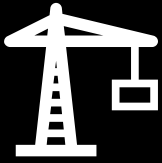
51% YES

34% NO CHANGE

15% NO

EY Webcast NextWave Global Trade Survey
May 20: ~1,700 respondents

"NOW", "NEXT" & "BEYOND" - Port & Terminal Operators



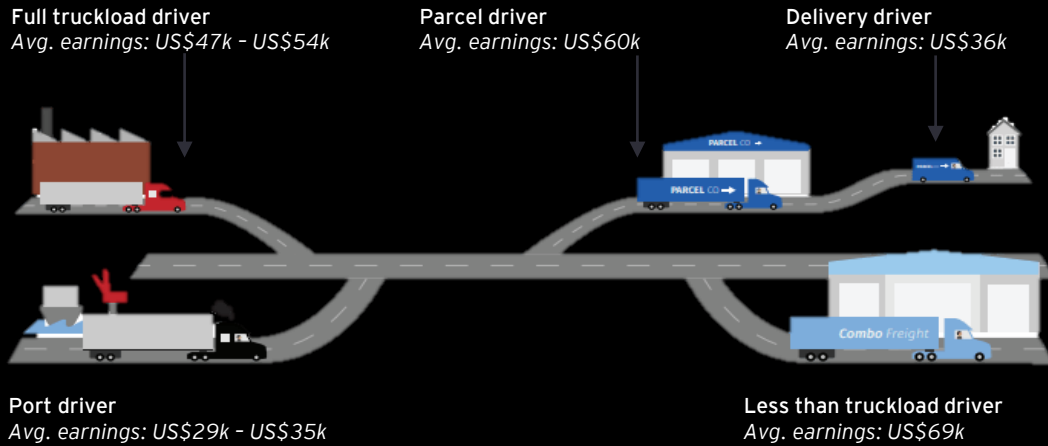
- ▶ COVID-19 has pushed governments to impose preventive measures leading to **sharp falls in cargo demand**
- ▶ Strict containment measures, screenings, increased documentation, reduced workforce capacity, etc have **heavily impacted port operations**
- ▶ Impact more severely on terminal operations where there is greater dependence on labour and limited automation
- ▶ **Fully automated terminals** are less exposed to the health impacts and may also have more flexibility in capacity management
- ▶ **Build up of import boxes** at certain terminals, with beneficial cargo owners facing a collapse in demand
- ▶ As demand recovers, delays in returning empty containers to exporters may lead to a **shortage of containers** for stuffing
- ▶ **Many ports may defer expansion plans** until demand risk is eased
- ▶ Conversely, for certain **congested ports**, a temporary easing of demand could provide an opportunity to **bring forward upgrade plans or capacity enhancements**, without disrupting operations or losing market share
- ▶ Some territories may accelerate privatisations / port asset disposals due to COVID-19 pressure on government finances
- ▶ Will COVID-19 accelerate **digitalization**, especially around **"Smart Port Ecosystems"** that reduce person-to-person interface & enhance supply chain sustainability and resiliency?
- ▶ **Capex constraints** may slow the pace of investment and change

Covid-19 will likely quicken the move to greater automation and digital

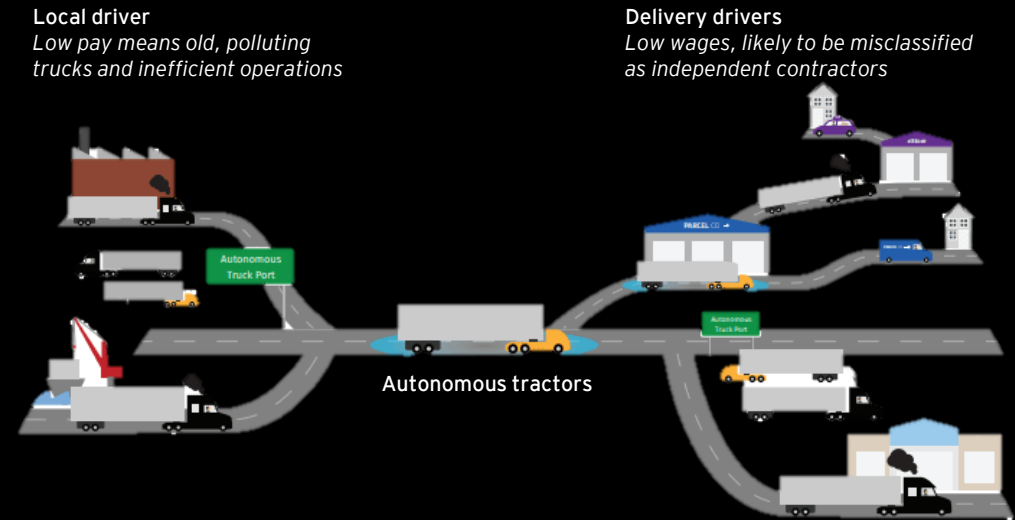
E.g. Connected Autonomous Vehicles (CAVs)...but political and social considerations may delay - higher unemployment, fallout from displacement of trucking jobs, etc post Covid-19?

UC Berkeley reported in 2018 that their new in-depth study supports a future where autonomous trucks will replace 294,000 long-distance driving jobs.

Current configuration of truck-driving jobs



Most likely automation scenario, absent policy intervention



Truck driving jobs and potential impact of autonomous

Segments of trucking industry	Full truckload	Less-than-truckload	Parcel	Ports	Pickup and delivery	Autonomous truck ports
Avg. annual wage (US\$ '000)	46.6 - 53.7	49.2	59.7	28.7 (contractors) 35.6 (employees)	35.6	?
No. of drivers	211,000	51,000	32,000	75,000	877,670	100,000+
Turnover	High	Low	Low	Low	Varies	?
Independent contractors	Common	Uncommon	Uncommon	Predominant	Mixed, potential to shift towards contractors	?
Unionization rates	Low	High	High	Low	Varies	?
Impact on autonomous trucks	Significant job loss	Significant job loss	Significant job loss	Uncertain	Significant job loss	Strong job growth

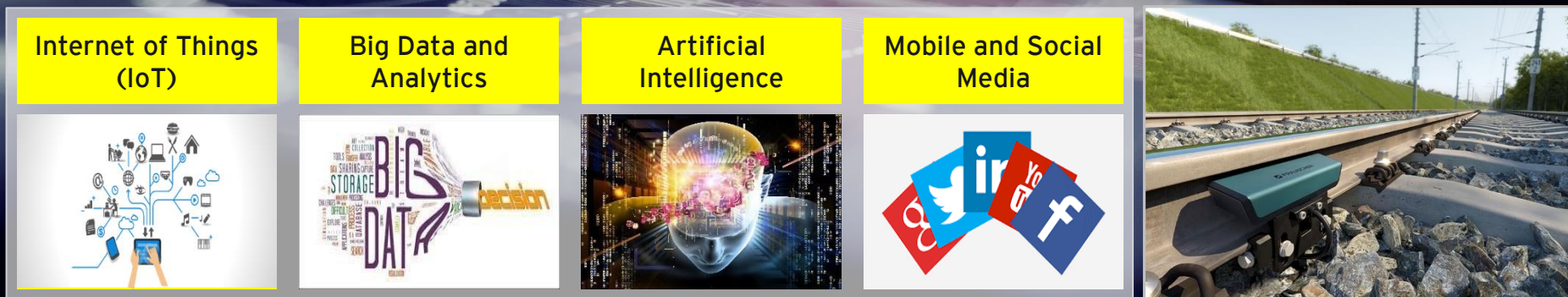
Supply Chain Enhancement & Restructuring

Digital innovations were already impacting across various dimensions pre the Covid-19 crisis

- ▶ Use of AI to improve forecasting & predictability - from assessing social-media trends & shifts in demand to inventory turnover & vendor behaviour: fine-tune supply chains in real time
 - Morrisons (British grocery chain) replaced manual stock planning with Ai enhanced system for demand forecasting & replenishment: reduced incidence of out-of-stock items on shelves by 30% and cut inventory needs by several days.
 - ORSAY (German fashion retailer) used self-learning algorithm to make +110,000 autonomous pricing decisions. Helped firm to reduce volume of stock that needed discounts of +30% to sell

Significant portion of procurement tasks (vendor management, order placement and invoice processing) can be automated using available technology...even more so in near future

- ▶ IoT facilitates better monitoring of shipments: e.g. sensors can track location of goods, but also the orientation of crates and factors such as temperature and humidity.
- ▶ **'Smart infrastructure'** - better design & delivery (e.g. BIM) and better asset management via sensors / IoT, including during future pandemics



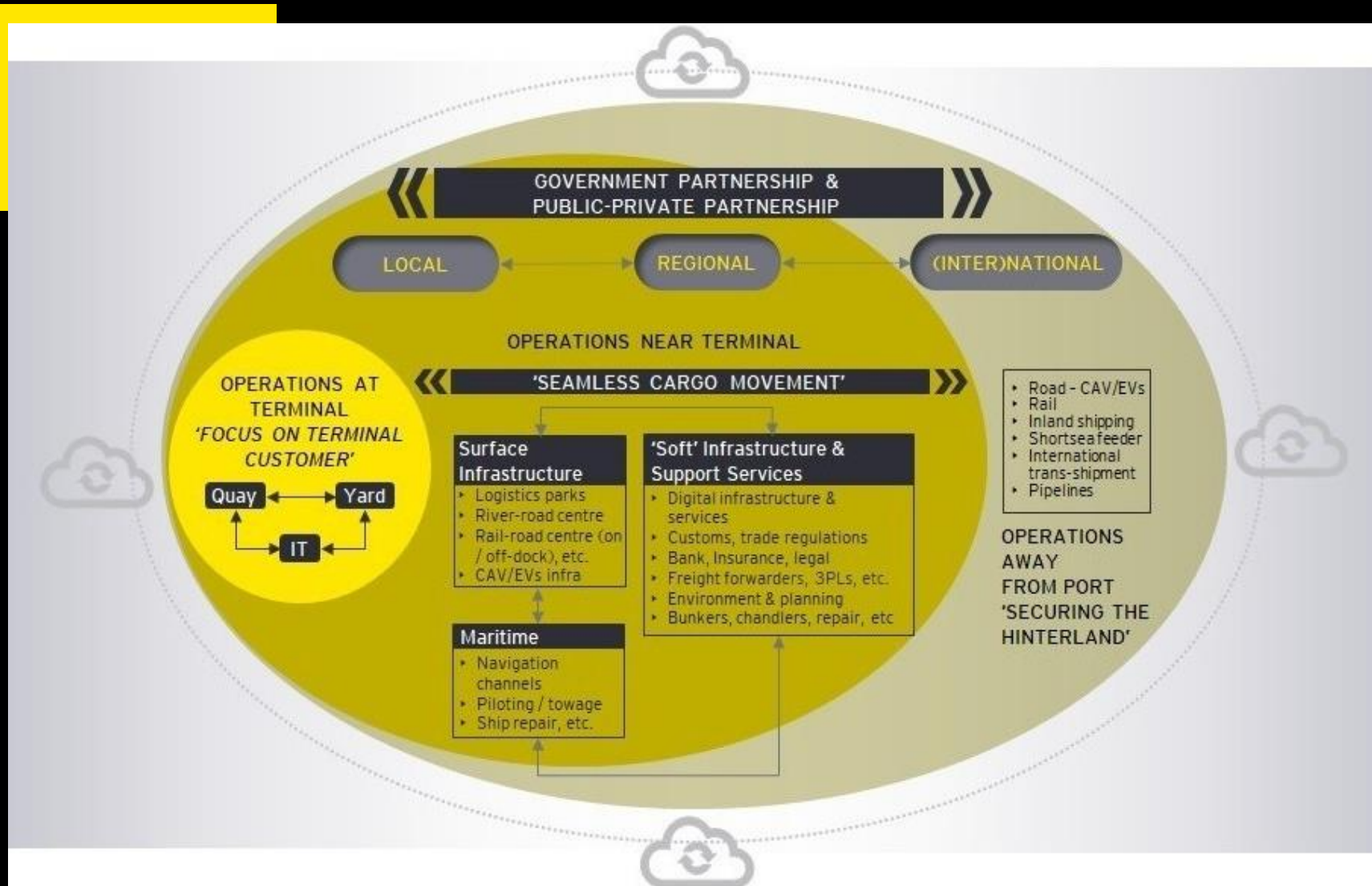
Source: EY; The Economist; Frauscher

Enhanced trade facilitation and data exchange through 'Digital'

- ▶ Current supply chains are complex and lack transparency; trade is largely facilitated / impeded by numerous paper based transactions
- ▶ Digital innovation offers considerable scope for streamlining, especially if regulations are updated accordingly. Great interest in how blockchains (distributed ledgers) might transform the supply chain and logistics industry - reduce paperwork, free up working capital, increase transparency, etc.
- ▶ A number of initiatives and platforms:
 - ▶ E.g. Maersk and IBM's "TradeLens" - distributed ledger technology platform for supply chains
 - ▶ E.g. Global Shipping Business Network - several terminal operators & lines, including HPH, COSCO, PSA, DPW
 - ▶ E.g. "Insurwave™" - first marine insurance blockchain platform in commercial use: developed by EY and Guardtime, in collaboration with Maersk, Willis Towers Watson, MS Amlin and AXA XL Catlin (www.youtube.com/watch?v=w2HHhopoRTs)
 - Links shippers, brokers through to insurers and reinsurers via distributed ledger and enables sharing of trusted data and transactions
- ▶ Still in their infancy, but adoption is ramping up, especially in China (e.g. cargo release via Blockchain in YRD - Tesla and GSBN pilot) - Covid-19 crisis will fuel this process
- ▶ Growth of "**Smart Ports**" and "**Digital Port Ecosystems**": e.g. Antwerp through NxtPort, Hamburg through ChainPort and Singapore through digitalPORT@SG

'Smart Port Ecosystems'

Requires collaboration & co-operation across diverse ecosystem stakeholders



"Digitalizing the Port Call Process"
United Nations Conference on Trade and Development (UNCTAD). Jan '20

It is essential for ports to be connected to the global supply chain and this can be enabled through the introduction of digitalisation and enhanced procedures of collaboration and data sharing.

The challenge is the absence of bodies that can strongly influence standardisation.

June '20, a coalition of 10 maritime groups, led by International Association of Ports and Harbors (IAPH) noted that;

"While some port communities seized the opportunities of the fourth industrial revolution and developed into full-fledged 'smart' ports, many others have barely grasped the essentials of digitalization and continue to struggle with larger reliance on personal interaction and paper-based transactions..."

"Exchanging paper by hand and relying on person-to-person interaction simply doesn't cut the mustard anymore, neither from a safety nor efficiency standpoint."

Thank You



Dr Jonathan Beard
Partner | Infrastructure Advisory

Ernst & Young Transaction Ltd
21/F, Citic Tower, 1 Tim Mei Road, Central, Hong Kong

Office: +852 2675 2991
Mobile: +852 9661 6058 / +852 6095 8434

jonathan.beard@hk.ey.com
ey.com

NextWave Global Trade
“Imagine the Beyond”:
[download link or streaming](https://players.brightcove.net/1066292269001/default_default/index.html?videoid=6075687778001)
https://players.brightcove.net/1066292269001/default_default/index.html?videoid=6075687778001

EY | Assurance | Tax | Transactions | Advisory

About EY

EY is a global leader in assurance, tax, transaction and advisory services. The insights and quality services we deliver help build trust and confidence in the capital markets and in economies the world over. We develop outstanding leaders who team to deliver on our promises to all of our stakeholders. In so doing, we play a critical role in building a better working world for our people, for our clients and for our communities.

EY refers to the global organization, and may refer to one or more, of the member firms of Ernst & Young Global Limited, each of which is a separate legal entity. Ernst & Young Global Limited, a UK company limited by guarantee, does not provide services to clients. Information about how EY collects and uses personal data and a description of the rights individuals have under data protection legislation are available via ey.com/privacy. For more information about our organization, please visit ey.com.

© 2020 Ernst & Young PLT
All Rights Reserved.

Disclaimer

This presentation has been prepared for general informational purposes only and is not intended to be relied upon as accounting, tax or other professional advice. Please refer to your advisors for specific advice.

This presentation is provided solely for educational purposes; it does not take into account any specific individual's or entity's facts and circumstances. It is not intended, and should not be relied upon, as valuation, tax, accounting, or legal advice. Ernst & Young Transactions Limited expressly disclaims any liability in connection with the use of this presentation or its contents by any third party.

Neither EY nor any member firm thereof shall bear any responsibility whatsoever for the content, accuracy, or security of any third-party websites that are linked (by way of hyperlink or otherwise) in this presentation.

The views expressed by the presenters are not necessarily those of Ernst & Young Transactions Limited or other members of the global EY organization or of any other company or organization.

ey.com/en_my



Building a better
working world