



# Global Supply Chains

An Economic Report by the SMIF Economics Team

# Executive Summary

More risk, more inflation, slow recovery to a new normal based around increased automation, green technology and 2 distinct poles in the world.

## New Technologies

- Automation is a key change being phased in to the supply chain industries, it can maintain fleets of ships or trucks at optimal efficiency with less accidents.
- Machine Learning is also being utilized to better design infrastructure, trucks or even pathing.
- Blockchain technology is being utilized in specific cases to provide better visibility and traceability for products, allowing enhanced efficiency with limited data.
- This will mean large markets for cryptocurrencies such as Chainlink or companies like Palantir who specialize in blockchain or machine learning respectively.
- Decreased labor costs may also increase profits.

## Roads and Trucks

- In the short term costs per mile for the USA is likely to increase.
- This is mirrored around the world as stricter emission laws, higher fuel prices, higher wages and a shrunk workforce due to COVID vaccination departures increase prices.
- However, EV and Hydrogen will increasingly move in as fuel source.
- This means big trucking companies will likely end up ahead, along with innovative truck designers particularly in hydrogen or with better emissions.
- Huge infrastructure roll outs are happening globally. While China is tapering, the USA and Europe are increasing roads, bridges, green infrastructure and redesigning major transport hubs.

## De-Globalization

- Russia will join a Chinese trade bloc, unfortunately China is having limited success expanding this to non-developing nations
- Further this expansion is mainly predicated on 'free' money from China, which will run into issues if China suffers economic strain.
- Meanwhile the USA is shifting investment to India and South East Asia, while Europe is shifting to North Africa and the Gulf States.
- The real wild cards are India, Ghana, the Philippines, and potentially Indonesia.
- We can expect the Indian stock market to accelerate, while the Chinese market stagnates, although the USD will likely depreciate against the Yuan

## Ports, Pipelines and Planes

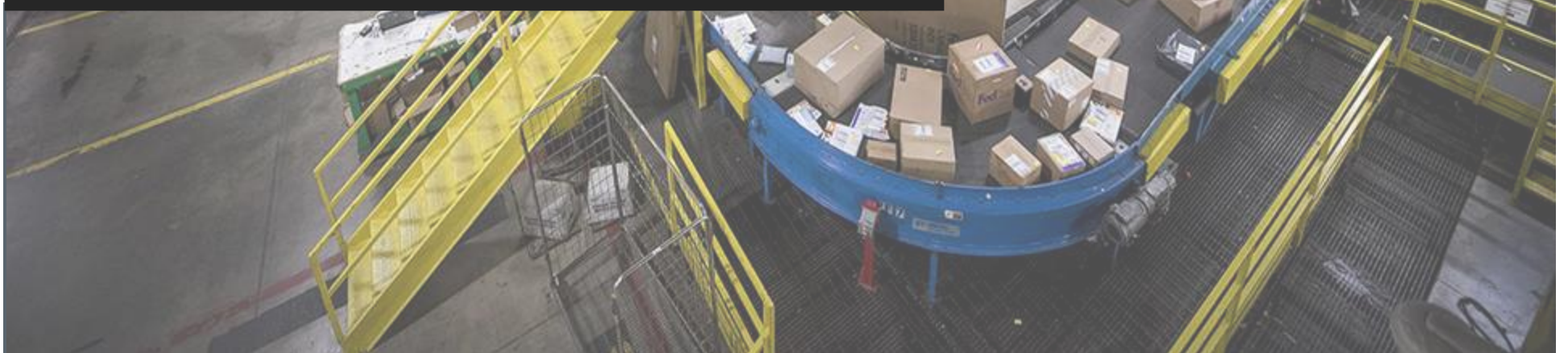
- Pipelines are still being built, although this will likely peak soon as Natural Gas is still increasing in use (as the world moves away from Oil).
- European Pipelines are likely at their peak with some increase in Spain, Norway and Italy but overall LNG will take much of the supply.
- China and India are key markets for Oil and later Hydrogen.
- Air freight is set to expand as consumers preference short delivery.
- Set to see cargo airports and freighters revenue expand with costs.
- Martine is being stunted by lack of ships and port shutdowns but could very easily see one of the supermajor traders be absorbed soon.
- Port strikes and closures are the key metric to look to forecast shipping.



# Automation & Supply Chains

EFFECT OF ARISING TECHNOLOGIES ON EXISTING SUPPLY CHAINS

THE UNSTOPPABLE FORCE OF ADVANCEMENT IN AN AGE OF VOLATILITY



# Automation and Supply Chain Operations

Automation increases operational efficiencies and helps build more resilient global supply chain.

## Supply Chain Disruptions and the Macroenvironment

- With the number of multi-national enterprises increasing by 185% since 1990, the last two decades have seen greater globalization across economies.
- Organizations have been able to profit from rising globalization by developing global supply chains to reduce the cost of production within manufacturing and labor processes.
- However, globalization has exposed supply chains to greater vulnerability to external shocks such as natural disasters, financial crises, and COVID-19, which has seen shortages, higher transportation costs, and decreased productivity.
- Driven by changes in consumer behavior during the pandemic & Ukraine-Russia crises, supply chain disruptions have placed tremendous inflationary pressure across the global economy.
- While some economists view high inflation levels as temporary, prolonged supply chain disruptions could lead to the un-anchoring long-term inflation expectations and wage-price spiral.

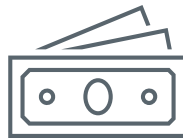
Key Benefits<sup>1,2</sup>



Improve Customer Satisfaction

5% to

**25%**



Reduce Costs

10% to

**20%**



Accelerate Revenue Growth

4% to

**6%**



Automation will assist organizations build resilience against future supply chain disruptions and develop a competitive advantage.

# Drivers of Automation

Robotic Process Automation, AI & Machine Learning, and Blockchain are three key areas driving automation across global supply chains

## Robotic Process Automation (RPA)

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- Software technology application that utilizes structured inputs to **automate systems** to process large quantities of data, transactions, and other operations
- The RPA market will **hit \$23.9 billion by 2030** as 72% of global operations are estimated to have integrated RPA
- Used to **streamline and optimize labour-intensive processes** based on rules, repetition, and mechanism
- Enables organizations to reinvest resources in improving customer service

## Artificial Intelligence & Machine Learning

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- Programming technology with algorithms and data streams to **synthesize insights from significant levels of data**
- AI has allowed companies like Mercedes-Benz to perform predictive analysis with over **600 dimensions and develop strategies** for product improvement.
- Automotive company BMW has utilized AI to 3D print to create over 10,000 parts such as parking brakes and sockets.
- **Societal hesitance toward AI** stands as one of the key barriers to greater integration.

## Blockchain Technology

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- Shared database that **automates digital record-keeping** without compromising traceability amidst complex transactions.
- Unique identifiers are perfect to **capture information regarding inventory, bills, orders** & other transactions that underpin the supply chain
- Walmart Canada uses blockchain for inventory transportation and allows them to **synchronize data & automate payment** for 70 third-party freight carriers
- Blockchain enriches **supply chain efficiency** with only limited data

### Key Benefits



Increase Output



Reduced Labor Cost

### Key Benefits



Rich Data Analytics



Predictive Analysis

### Key Benefits



Record-Keeping



Traceability

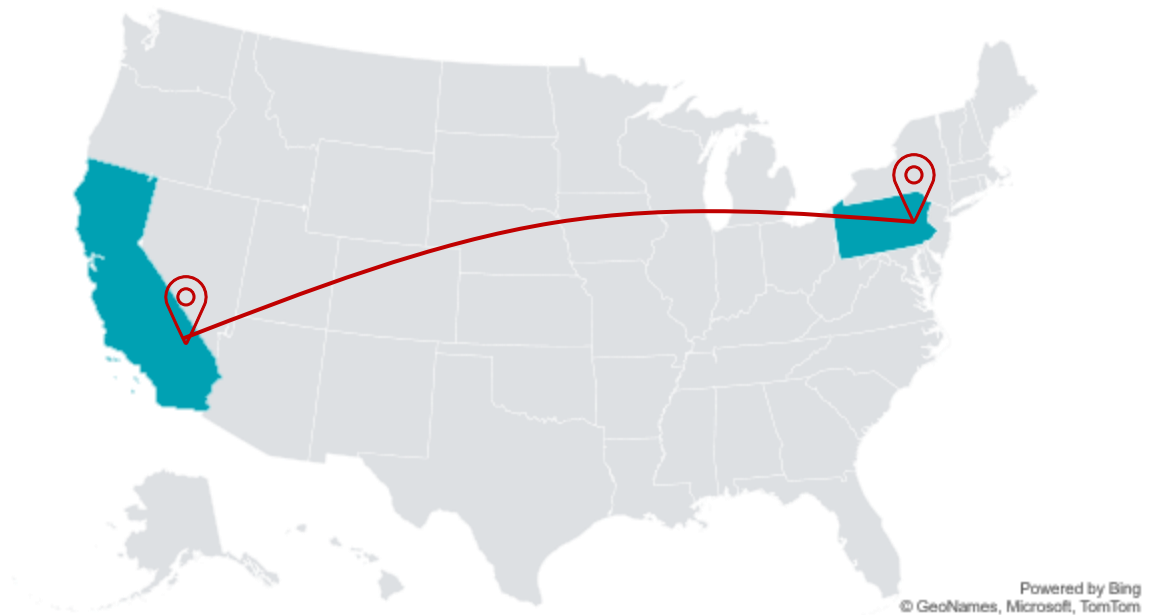
# Case Study: DHL

The global logistics company has significantly invested in research & development to create autonomous vehicles for supply chain operations

## Driverless Trucks and Autonomous Mobile Robots

- In 2019, DHL tested **an autonomous freight truck** to deliver butter 4,500km from California to Pennsylvania.
- A process that usually takes nine days (5 days for fast-tracked delivery) was **completed in 3 days.**
- Freight trucks utilised A.I. and Machine Learning to the vehicle to adjust to unfavorable weather such as snow, sleet, and rain impacting road conditions.
- In December 2021, **DHL orders 100 self-driving U.S. trucks** from TuSimple and Navistar for 2024 and 2025.
- Continued technological advances will allow the **large-scale implementation of driverless vehicles** within the logistics industry
- Market predicts no more than few hundred-thousand autonomous truck
- The USA is experiencing an 80,000-truck driver shortage so AMR investments could **solve current supply chain disruptions.**

 **4,500km route done by autonomous freight truck from California to Pennsylvania**





# Maritime Supply Chains

EXPLORING THE COMPLEX OCEAN SUPPLY LINES THAT ARE THE FOUNDATION OF MODERN GLOBALIZATION

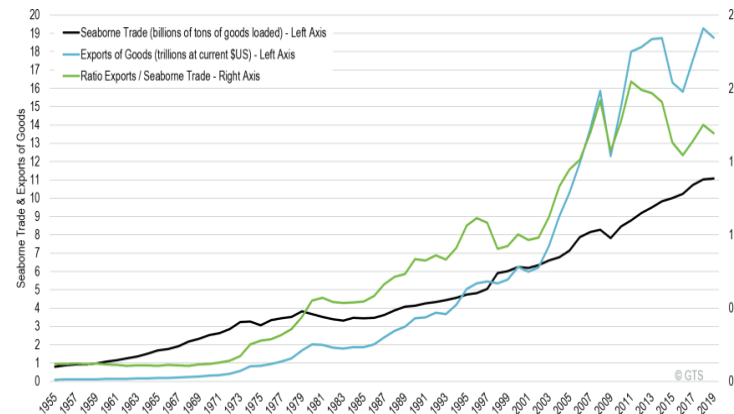
Getty Images

# Overview of the Maritime Supply Chain

In an increasingly interconnected global economy, the delivery of goods by the cost-effective maritime supply chain has revolutionized the world.

## Background

- As a brief overview, the **Maritime Supply Chain** encompasses the entire shipping industry consisting of shipping lines, port terminal operators, and land-based logistic systems
- In the past 2 years the maritime supply chain has experienced a giant ship wedged across the **Suez Canal**, record-breaking shipping rates, armadas of vessels waiting outside ports and covid induced lockdowns
- Containerisation** revolutionised global trade, a large, steel box that is stackable and designed to fit on ocean freight ships, trains and trucks.
- It became an **unnoticed cog** in the highly complex network of supply chains for decades, until recently.
- Containers are measured by **Twenty-foot equivalent unit (TEU's)**, these are the standard size containers globally
- The graph depicts the rise of exports globally, has coincided with a **rise in seaborne trade**



## Containerization as Driver of Economic Growth

- Globalization** and **containerisation** are closely related
- Since the first container ship in **1956**, the **containerisation** of the maritime supply chain has fueled **economic growth**
- Fostered closer interdependence between countries and delivered **efficient** and **effective** supply chains globally.
- The ease at which containers can move vast amounts of goods around the globe at **low costs** has been a driver of globalization
- According to the WTO, around **80% of global trade** by volume is moved by ships
- The **standardization** of the container reduced the barriers needed to export and import goods for a country.
- Pictured below, the **first** containership entering **Fremantle Port** in March 1969





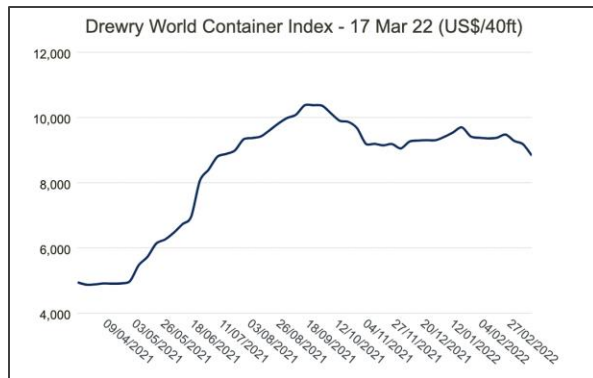
# COVID-19 and Maritime Supply Chain

The unforeseen pandemic touched everything, but its effect on the maritime supply chain was felt acutely.

## The Initial Phase

- It is well documented, that **government-imposed lockdowns** and restrictions had **disastrous** effects on supply chains.
- As mentioned, the shipping supply chain became an **unnoticeable** cog in the global supply chain, where delivering **'just on time'** was a key feature
- The graph below, shows the global **average spot-price of shipping a container**, in the past 12-months.
- A clear **peak** can be seen in the middle of 2021, when these impacts were felt most

## World Container Index



## The result of Restrictions



## Los Angeles Turnaround

- The above images shows ships waiting to be unloaded outside the **Port of Los Angeles**, a common sight around ports in 2021
- The COVID-19 restrictions forced port workers into isolation and restricted the movement of people, **slowing** the **turnaround** time of ships, this then led to long backlogs of ships waiting to be unloaded.

## The Outcome

- The below graph shows the spot prices for the four busiest routes out of the **Port of Shanghai**.
- As can be seen, a **sudden increase** in price occurred across all four routes, due to restrictions and problems in the supply chain
- However, as of recently there has been a **plateauing of prices**, as ports and shipping companies returned to pre-pandemic schedules
- Regardless, spot prices remain **well-above** pre COVID-19 prices

## Trade Routes in Shanghai

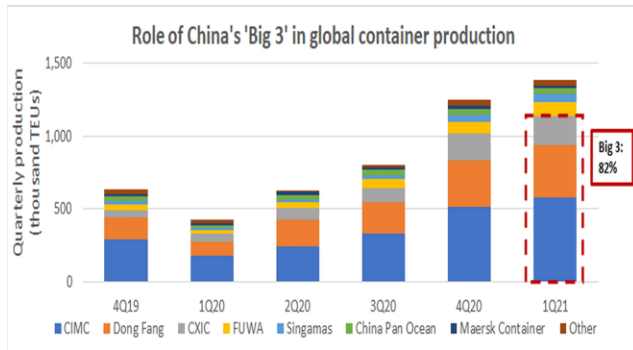


# Sections of the Maritime Supply Chain

The Maritime Supply Chain is made up of different sections that contribute to the connectivity of goods around the world.

## Production of Containers

- The creation of **Twenty-Footy Equivalent Units (TEUs)** revolutionized the maritime supply chain.
- **96%** of the world's containers are built by just three companies in China
- China has been able to **dominate** the container construction market for the past 15 years
- The **'Big Three'** CIMC, Dong Fang & CXIC Group
- **60%** of goods transported by sea are packaged into containers



## Ports and Rivers

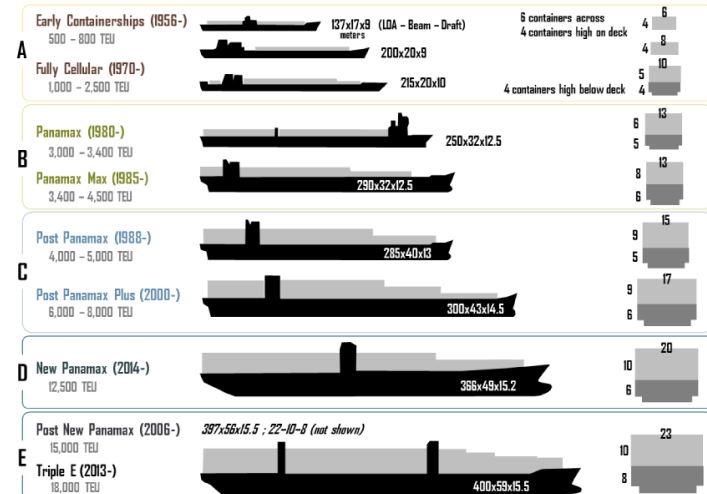
- A key linkage in the maritime supply chain is **ports** and **rivers**
- The **Mississippi River** connects goods to 20% of the US consumer market
- Ports have become a **focal point** of the supply chain through the COVID-19 pandemic
- The **efficiency** of ports to **turnaround** ships has come under scrutiny like never before
- In the US, it took an **executive order** by President Biden to authorize some Ports to operate 24 hours a day

### Port of Long Beach, USA



## Bulk Carriers

- A **bulk vessel** is specifically designed to transport unpackaged cargos, such as grains, wheats, ores and
- Bulk carriers require **specialized equipment** to load and unload the goods
- In 2021, bulk carriers made up **21%** of the world's shipping fleet.
- In recent years, bulk carriers have been specifically designed to carry **Liquefied Natural Gas (LNG)** and in the future transporting **Hydrogen**.



# Key Players

The maritime supply chain is dominated by an oligopoly of container shipping companies, huge infrastructure mega-projects and an obsession with Panama's maritime legislation

## The Oligopoly of Container Shipping

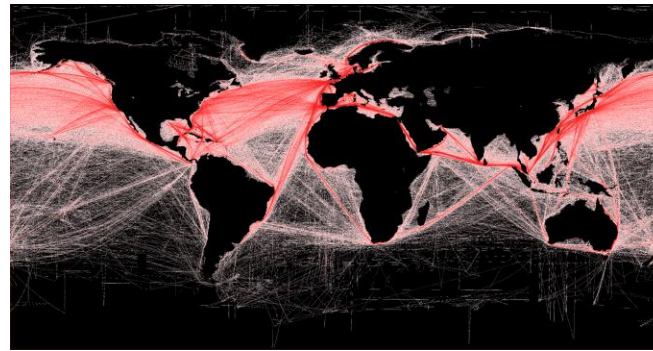
- The container shipping industry is dominated by **four key players**
- Maersk, Mediterranean Shipping Company (MSC), CGM CMA and COSCO
- **Mergers and Acquisitions** have consolidated these four companies
- Combined they have a market share of **50%** of the entire container shipping trade
- Maersk Shipping had been the **largest** container ship operator until 2021
- **MSC** is now the largest container shipping line in the world
- Only Maersk is listed on the NASDAQ under the ticker **MAERSK A**

## Big Infrastructure Projects

- In the last decade alone, both major canals of the world have undergone major improvements
- In 2016, the **Suez Canal** opened a second channel, allowing ships to move in both directions
- Cutting waiting times from 11 hours to only **3 hours**
- In 2016, the **Panama Canal** built a third channel at a cost of US\$5.25 billion
- This **doubled** its capacity and increased the size of Panamax vessels
- The image below shows shipping **pinch points** globally, including the Suez and Panama Canal's

## Panama's Dominance of Ship Registration

- It is a curious question as to why most maritime vessels you see at sea fly the **Panama flag**
- Under International Law, every merchant ship must be **registered** with a country
- Around **8,600 ships** fly the panama flag, compared to 3,400 registered to the US, and 3,700 to China
- Panama operates an **open registry** for its vessel registration
- Its flag offers **advantages** such as easier registration and the ability to employ cheaper foreign labor



A large freight plane is parked on a tarmac at sunset. The plane is viewed from a low angle, looking up at its nose and cockpit. The sky is filled with soft, golden light from the setting sun, with scattered clouds. The plane's four engines are visible, and the tarmac in the foreground is illuminated by the low sun, creating a long shadow. In the background, there are airport buildings and other aircraft.

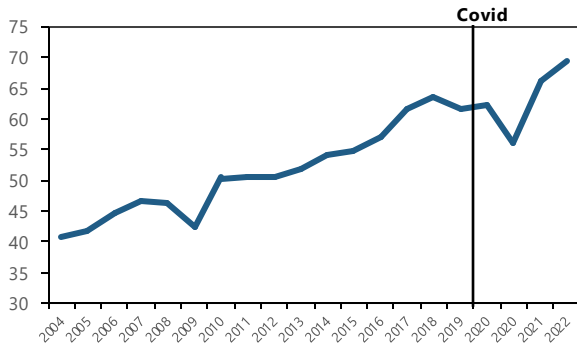
# Freight Planes

THE DEVELOPMENT OF THE INDUSTRY AS IT ADAPTS TO E-COMMERCE  
TRANSACTIONS

# Freight Planes

Key Drivers for Freight Planes have led to its explosion in use as well as increasing prices, mainly driven by higher demand from air freight companies.

**Airfreight Traffic (Million tons)**



Strong Worldwide airfreight traffic from 2004-2022 (Freight in million metric tons)

## Strong demand for Air-Freight

- Covid-19 disruptions to demand for airfreight are minimal in comparison from those from 2020-21
- Freight system handling near record volumes of cargo
- However, Demand is expected to decrease as government stimulus/fiscal packages stop
- When infection rates decrease, demand for air freight will decrease again due to a shift from goods consumption back to services

**Kerosene Type Jet Fuel Spot Price (USD per Gallon)**



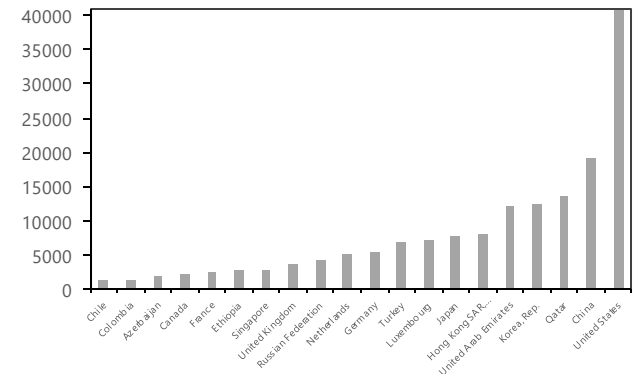
## Supply

- International air transport association is calling governments to ensure that air crew operations are not hindered by COVID-19 restrictions designed for air travelers
- To restore cargo capacity from "belly" space in the plane, international connectivity of passenger planes needs to be reinstated
- Warned that the war in Ukraine means the air cargo market is heading into another period of significant uncertainty with a rise in rates
- Fuel prices influencing cost of production

## Why do we use freight planes?

- Passenger planes do not possess the capacity needed for high volume goods transfer and do not serve key trade routes
- Freighters offer speed for time sensitive products
- Passenger airplanes lower holds are severely limited for transporting hazardous material

**Air transport, Freight (Million ton-km)**



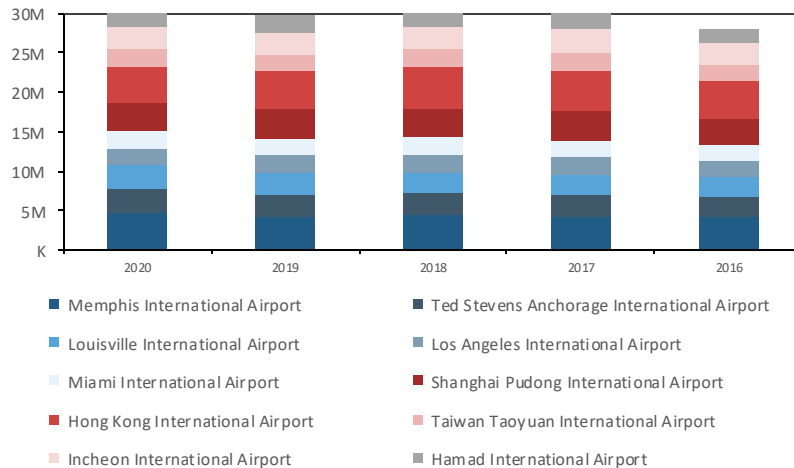
# E-commerce Transactions as the Savior of Freight Planes

## How e-commerce transactions has boosted demand for air-freight

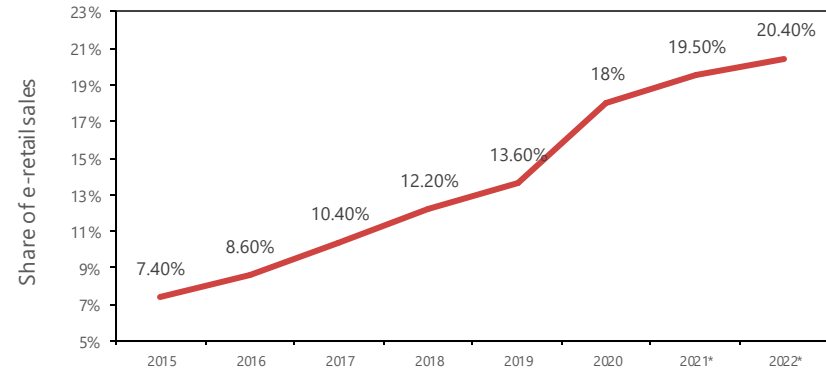
### Factors forcing the improvement of freight planes

- Improved customer and supply chain communication
- Transparency in the supply chain
- Ability to handle more inventory
- Advanced tracking and order management
- Customer satisfaction as the top priority
- Cost reduction
- Lowered fuel usage
- On-time delivery
- Fast delivery at prices consumers are willing to pay
- Frictionless returns process

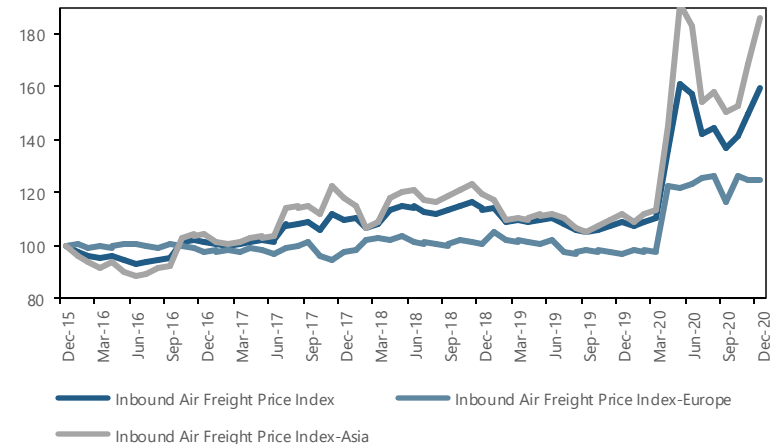
### Top 10 Busiest Airports by Cargo Traffic



### Retail E-commerce Sales Worldwide



### Inbound air freight price indexes





# Pipelines

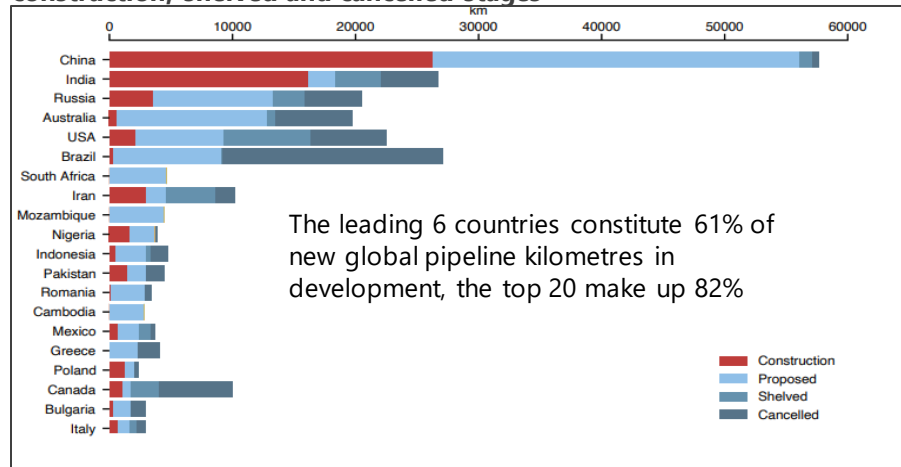
## **PIPELINES WITHIN SUPPLY CHAINS**

THEIR SIGNIFICANCE IN A WORLD NEEDING TO STOP CLIMATE CHANGE

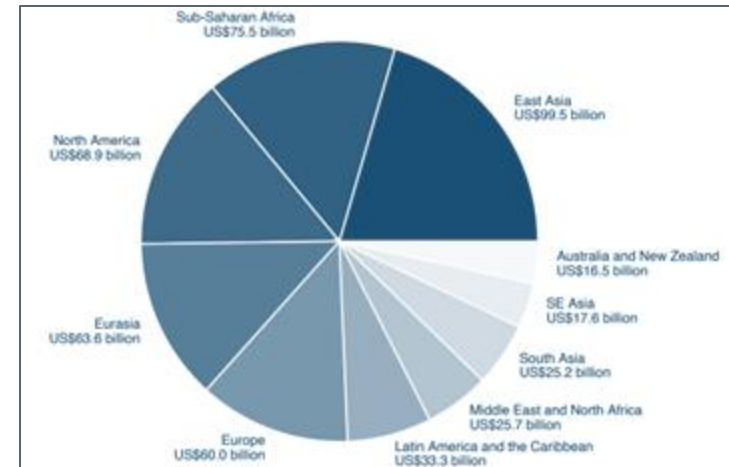
# Trends in the Pipeline World

## Ongoing projects and drivers of pipelines.

### Top 20 countries kilometers of Pipeline in the proposed, construction, shelved and cancelled stages



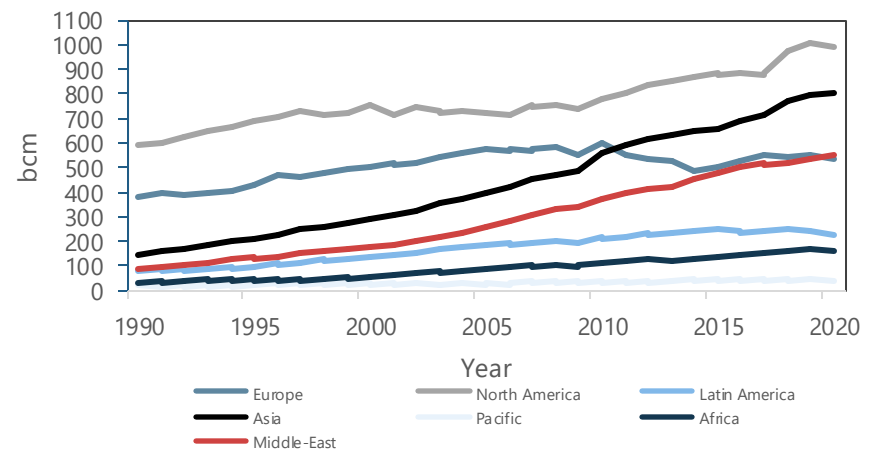
### Estimated Capital Expenditures for In-development pipelines



### The rising demand for pipeline explained

- Natural gas consumption increased significantly, reaching 3822.8 billion cubic meters (bcm) in 2020
- Increasing demand for natural gas in multiple industries, including power generation and transportation
- This trend is expected to continue in the coming years and is likely to drive the gas pipeline infrastructure significantly
- The development of new sources of natural gas, such as shale gas deposits, and the resulting price pressure are increasing the international trade of natural gas
- These developments are expected to consequently result in increasing the demand for pipeline network expansion during the forecast period.

### Natural Gas Consumption (bcm)





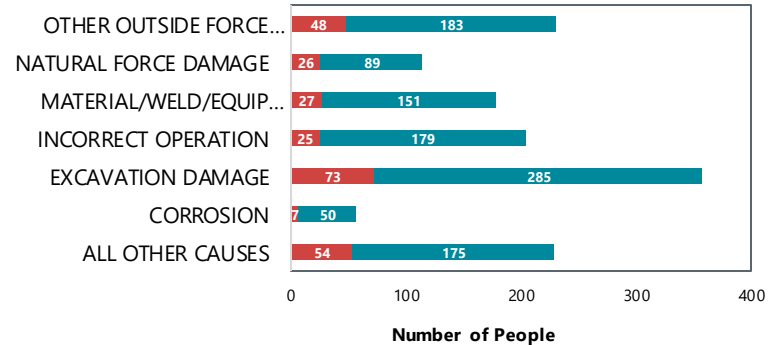
# The Environmental Debate on Pipelines

Is it naïve of the world to create more pipelines or is it what the economy needs.

## Arguments against pipelines

- Pipelines have caused many fatalities, injuries and general destruction of property and the environment
- Many employment opportunities from pipelines are temporary
  - More sustainable energy forms provide more jobs
- Cross state/country pipeline can create legal problems and security challenges

**Serious Pipeline Incidents in the US: 20 Year Totals 02-22**



## Evolution of Pipelines

- Converting natural gas pipelines to carry a blend of natural gas and hydrogen (up to about 15% hydrogen) may require only modest modifications to the pipeline.
- Converting existing natural gas pipelines to deliver pure hydrogen may require more substantial modifications.

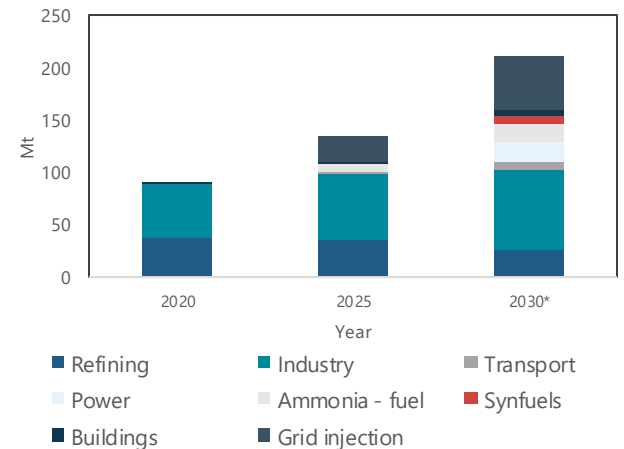
## Arguments in favour of pipelines

- Pipelines provide significant contributions of the economy
- It allows a transport from distant resources without significant capital
- Pipelines support every industry
- Transferring fuel through pipelines is safer than other transportation methods
- The technology has a significantly high safety rate

**Map of World Pipeline Infrastructure**



**Future of Pipelines - Global hydrogen demand by sector**

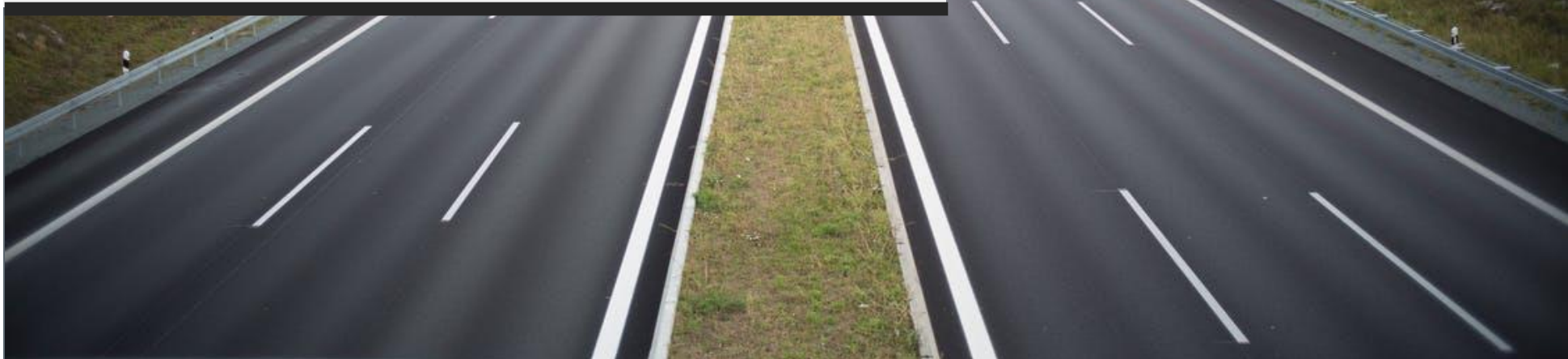




# On-road supply chains

LOOKING AT THE PAST TO PREDICT THE FUTURE OF ROAD FREIGHT

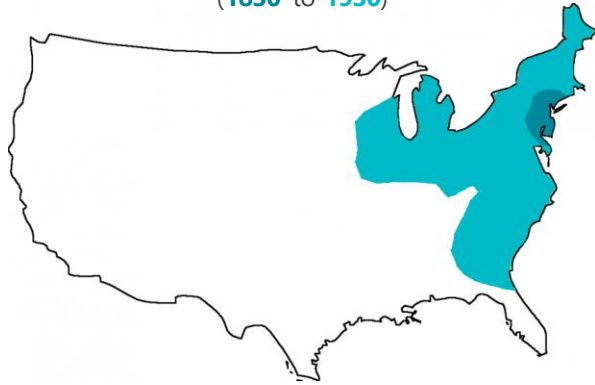
CONTINUED DEVELOPMENT AND URBANIZATION LAID ON A FOUNDATION OF ROADS



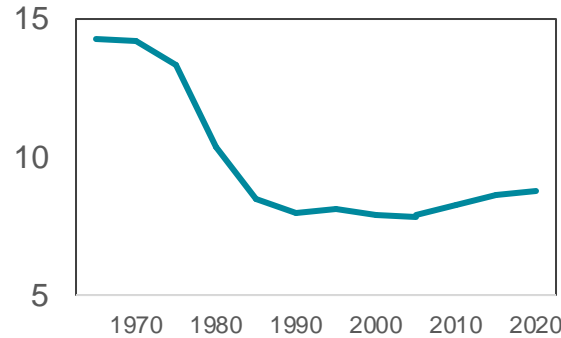
# Rise of On-Road Freight

Significant improvements in road networks and motor vehicles driven large increases in on-road freight transport

Areas within 24h of New York  
(1830 to 1930)



Australian road freight cost per ton-km (\$AUD, inflation-adjusted)

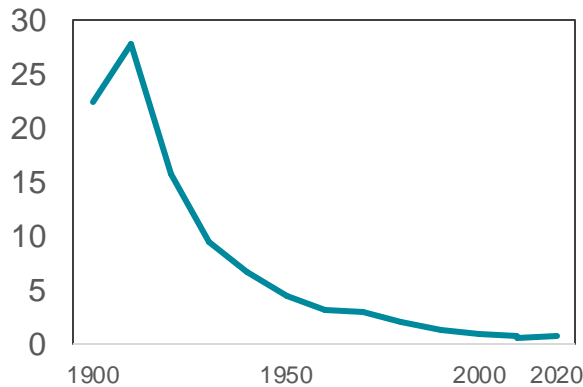


## Three generalised stages of road infrastructure networks

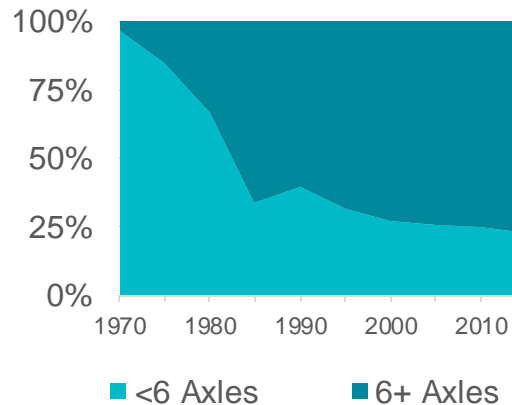


- 1 Adoption: construction of paved road, increased share of freight transported via road and motor vehicle (e.g. US 1900s)
- 2 Expansion: massive expenditure to increase road network length and quality (e.g. China 2010s, US 1950s)
- 3 Neglect: reduced spending on road, backlog of maintenance, reducing quality (e.g. US 2010s)

US Fatalities per 100 million vehicle kilometres



Share of Australian road freight by truck type



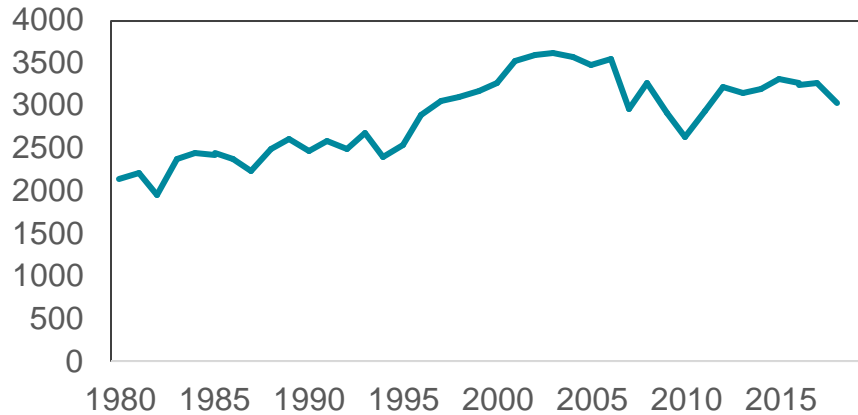
## Key insights

- The construction of road networks and the adoption of motor vehicles improves land speed, and creates a 'smaller' world
- Road travel became much safer
- Road freight costs per ton-km decreased during the 1970s and 1980s. This reduction coincided with a shift towards different types of vehicles
- Countries fall in one of the three generalised stages of road networks

# Road Infrastructure Stagnation

The US road network has been neglected, coinciding with flat growth in truck volume

US truck freight volume (billion ton-kilometres)



Large amounts of US road and bridge infrastructure are in poor shape



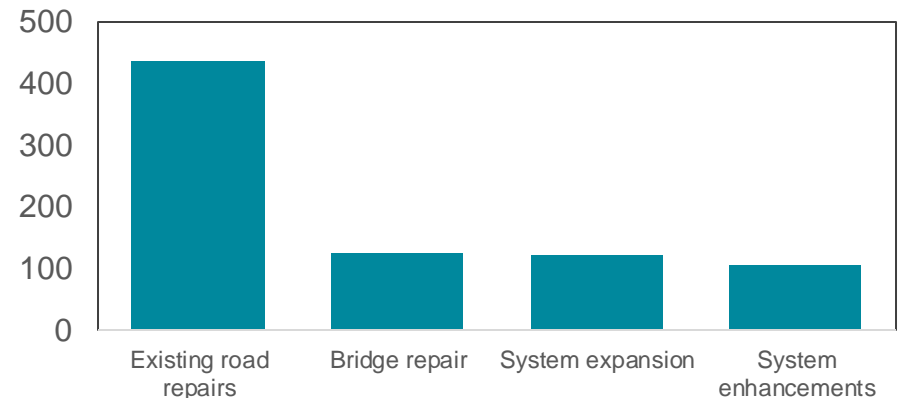
Pittsburgh bridge collapsed hours before President Biden was scheduled to visit and pledge infrastructure funding (Photo: New York Times)

## US Road Infrastructure fails report card

- 43% of roadways system are in poor or mediocre condition
- Extra vehicle repairs and operating expenditure cost \$130bn per year, wasted time and fuel costs \$1000 per motorist.
- "D" grade assigned to roads by the American Society of Civil Engineers 2021 Report Card
- 72% of goods worth \$17T are moved by highways
- Report notes that interstate system is generally in good condition, but urban and rural roads are poor



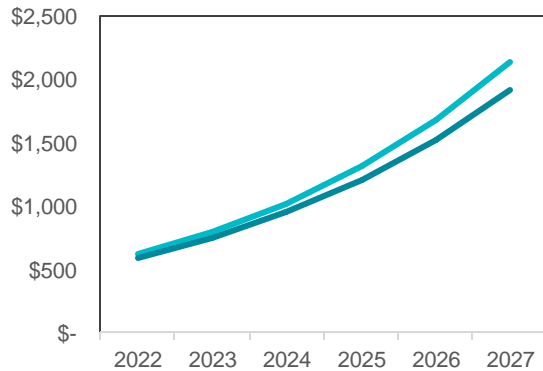
US road infrastructure backlog (\$B USD)



# Future of On-Road Freight

New vehicles are set to take off on improved infrastructure networks, leading to key manufacturers entering new markets

## Autonomous truck (light blue) and electric truck (dark blue) market size (\$M USD)



## US Infrastructure Investment and Jobs Act

- White House recognises that 20% of highways and major roads are in 'poor condition'
- Largest investment in bridges since the Interstate highway system began in the 1950s
- \$110bn for roads and bridge projects
- \$7.5bn to build electric vehicle charging infrastructure (500,000 chargers)
- Bill signed into law on 15 November 2021

## Drivers

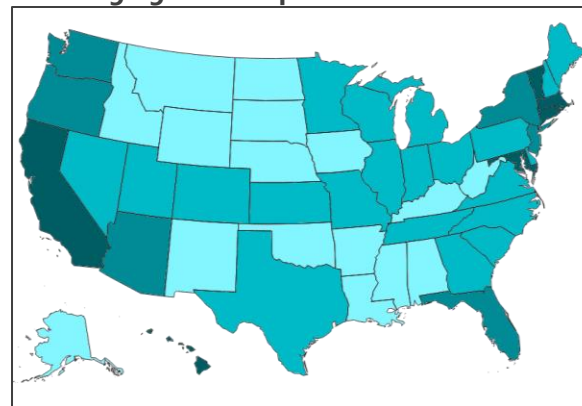
- EV battery cost is expected to decrease by 57% by 2030
- Prolonged high fuel prices – WTI forecast of \$80/barrel in 2024 – could accelerate transition towards EV trucks
- Government incentives – e.g. Indian GST Council reduced tax on electric vehicles from 12% to 5% in 2019.
- ESG – trucking industry may come under increasing pressure to decarbonize
- Labor-force issues, such as 2022 Canada Trucker Protests against vaccine mandates

## Key players

- Leading tech companies are operating in the autonomous truck space - Otto (Uber Subsidiary), Waymo (Alphabet Subsidiary)
- Tesla *Semi* truck was released in 2017
- Other players in the electric & Automated truck industry:



## EV Charging stations per 1000 miles of road



Key: ● >10 ● 5-10 ● 1-5 ● <1

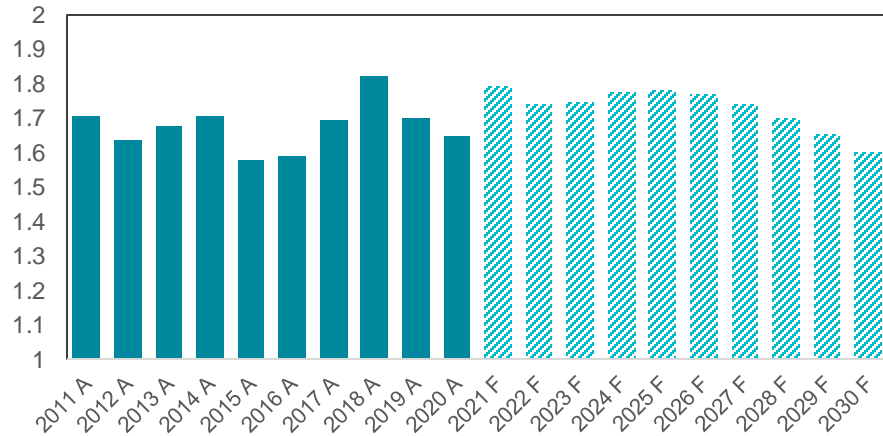
## Limiting factors

- Lack of EV infrastructure on long-distance highway routes – required before EV trucks can be viable
- Nickel prices are at 15-year highs – key battery metal
- Autonomous trucks face legal hurdles, as most countries' laws prohibit empty vehicles driving themselves.
- Truck-driving is the most common job in 58% of American States – potential strong resistance to full-automation of industry

# Cost Forecasts for On-Road Freight

Long-term decline in fuel consumption due to Electric Vehicles will offset short-term diesel price increase, whilst other factors also affect price.

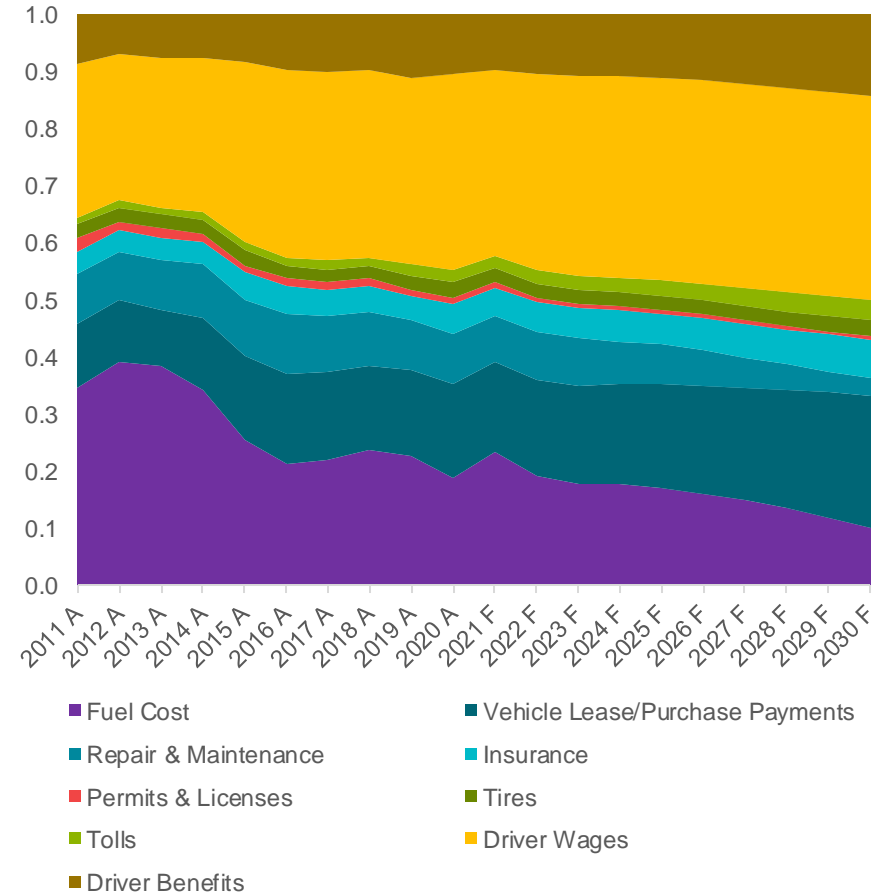
**Forecast total cost per mile for US truck freight**



## Key drivers of cost change

- Fuel prices: 2021 cost per mile forecast to increase largely driven by high diesel prices caused by Russo-Ukrainian war.
  - Towards 2030, when total EV penetration nears 40%, fuel will begin to decrease as more electric trucks enter the network
- Repair & Maintenance: EV's have fewer moving parts, especially when compared to large diesel trucks.
- Vehicle Lease/Purchase payments: constitute an increasingly significant share as operators take higher up-front costs in exchange for lower maintenance OPEX
- Despite automation, driver wages will continue to remain a significant driver of cost, as 100% Automation is still decades away due to technical and legal restraints.

**Forecast distribution of costs per mile for US truck freight**





# Deglobalization

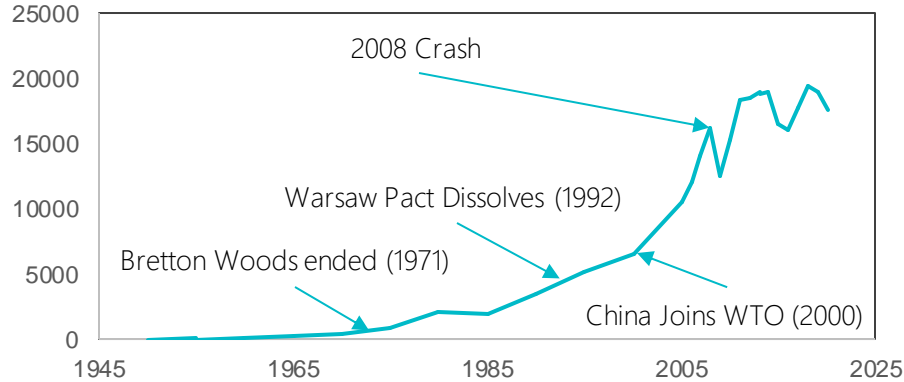
EFFECT OF DE-GLOBALIZATION ON SUPPLY CHAINS

A FRACTURED WORLD AND A UNIVERSAL QUEST FOR POWER AND INFLUENCE

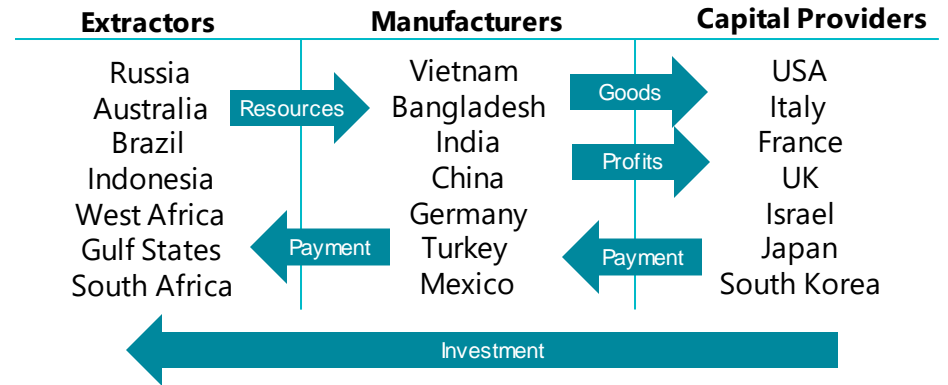
# Rise of Globalization

The end of WW2 brought US backed globalization under Bretton Woods. Since the 80's, the world has revolved around the US fiat Dollar with increased global free trade and specialization.

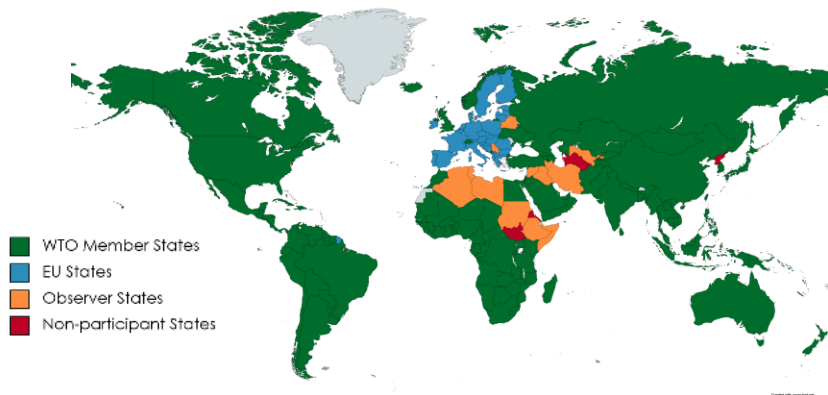
Global Export Value of Trade in Billions USD(\$)



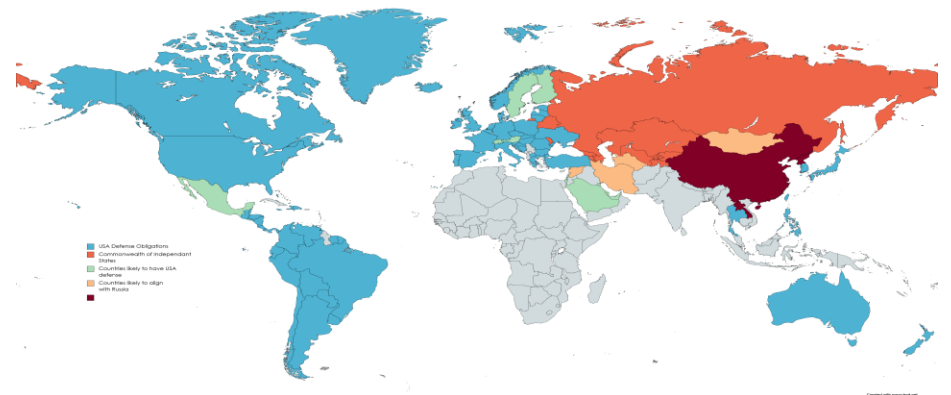
Interdependence globally has created a trade cycle:



Map of WTO member states (2020)



Map of Major USA, Chinese and Russian Allies





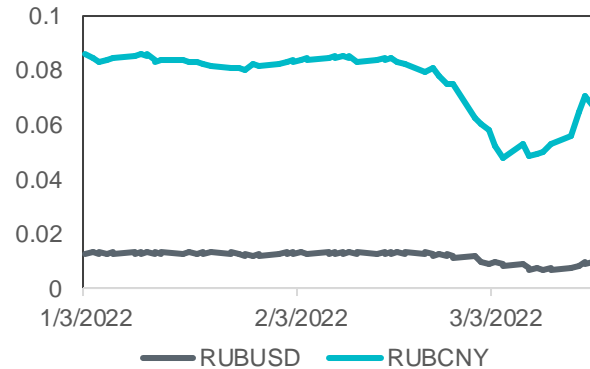
# Repolarization of the East

Currently we are seeing China rise as the Capital provider for Russia, which threatens to form an East Asian counter bloc to the USA. India will likely remain a neutral trading partner.

## India Ruble-Rupee Exchange

- Now that Russia has no access to the SWIFT payment system, India now has to use non-SWIFT trade mechanisms
- This includes the resurrection of the Ruble-Rupee Exchange, a direct way for Russian firms to trade in India through a government kept 'ledger'
- This is now being used by India to buy 3M barrels of crude Oil
- This is also likely to be boosted by a free trade agreement that is being negotiated

## Ruble Has Halved as Exports are Blocked



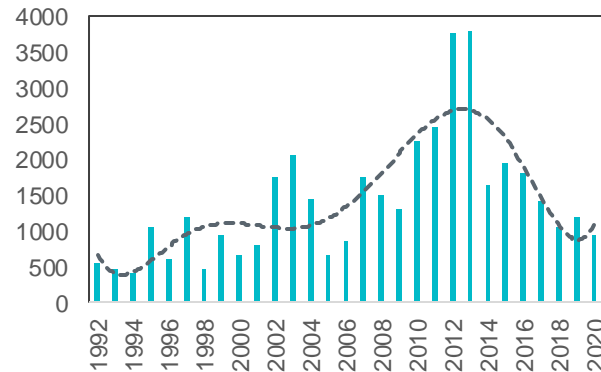
## Chinese Liquidity for Russian Woes

- Russia relies on exporting key extractive resources in exchange for foreign currency to sustain its significant military (~5% of GDP)
- Since VISA and Mastercard have suspended operations, Russian credit cards and bank transfer has now had to go through Chinese Unionpay
- At least 500 major Russian companies have opened foreign accounts with Chinese banks – a major win for Chinese capital markets

## Indian-Russian Historic Ties

- As is alluded above, India and Russia have been trading for many years
- During the cold war, the socialist Indian government was supported by the communist USSR
- This includes arms and areas like healthcare or education
- Bilateral trade is targeted to grow to US\$30B in 2025, **up 219%** from 2017
- Russia also helps India manage its civil nuclear force, and supply its manufacturing

## Arms Exports from Russia to India \$USD M



## Shanghai Cooperation Organization

- Russia has spearheaded an organization which links Iran, Pakistan, India, China and Russia along with other minor powers together
- This is a largely ceremonial and training based organization
- However, recent sanctions on Russia has led to integration between them economically leading to more natural resources within a Chinese led bloc
- India's commitment to such 'alliance' is questionable – very non-aligned

# Africa and the Middle East

Historic ties with the West, but increased investment and political pressure from the East means these resource rich regions are the biggest battlegrounds for bloc influence

## Pakistan

- Pakistan was a historic ally of America, utilizing a Sunni Islam regime to balance against communists and Shia Iran
- However, American-Pakistani relations have soured due to Pakistan's non-cooperation with the war on terror
- Further, China has poured billions into the country to develop infrastructure
- This seems a definite cessation of Central Asia to a China led bloc (along with Afghanistan)
- However, limited manufacturing or resources makes this non-critical

## Turkey

- Turkey has been a key NATO partner, famously hosting US ICBM's until the 70's
- It is also a key manufacturing partner with Europe, being a center for mid-level and electronic manufacturing
- Turkey imports energy from Russia, and recently military equipment
- But they differ on the issues of Syria, Armenia, and the Ukraine conflict
- High inflation and an economic depression may mean a more West aligned government

## Map of OBOR



## OBOR – Success or Failure?

- China's development is both for economic gain and political gain
- It seeks to turn central Asia and East Africa into regions under the Chinese sphere
- Both to safeguard Chinese land routes from US naval supremacy, and to expand Chinese resource extraction
- However, the over \$800B USD invested is mainly loans to countries like Pakistan with weak financials
- A default brings the tough choice of souring friendships or economic loss

## The Gulf States

- US not only has a security monopoly, but also developed capital ties to the Gulf
- China is building industrial parks and will likely seek to integrate more of its tech with the Gulf
- This might help China to secure more of its energy needs and open more of its export potential overland
- China is also increasing exports of arms and 5G infrastructure
- May lower demand for USD if fully achieved

## West Africa

- West Africa has traditionally supplied resources to France in return for security and capital
- France has launched many coups in W.A.
- Russia is stepping in to supply security
- China is stepping in to supply capital
- Mali has recently kicked out French troops and brought in Russian ones, Niger and Bukina Faso may follow
- China is developing Ghanaian iron ore reserves to supplement Australia and Brazil

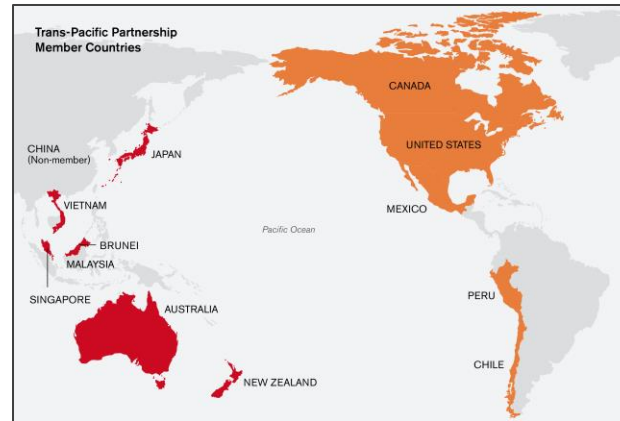
# Implications for the World at Large?

US trade partnerships and security pacts, as well as European investment and spending are trying to counteract Chinese cash and ideological friendship

## The West – losing the ideology war

- The USSR's communism made it a lot of enemies
- Particularly the local elite in many countries, and especially Islamic anti-communists
- However, many African and Asian societies are not fond of the 'West's' decadence and liberal social values
- China offers money, without pushing foreign values
- The West should reconsider our offering to those around the world

## TPP – a realigned Pacific



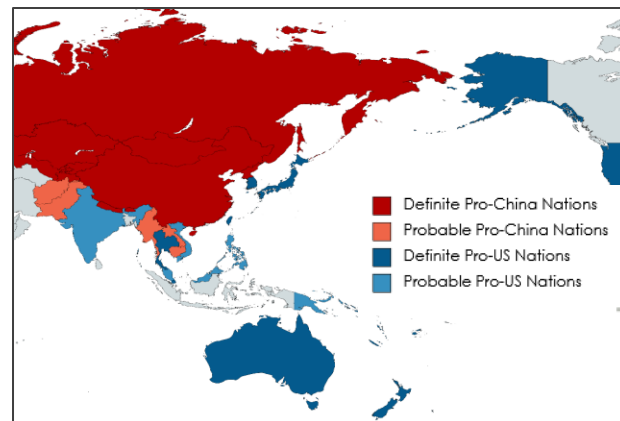
## The Quad

- A security and training agreement between India, Australia, Japan and the USA.
- This highlights India's continued security concerns with China
- If the USA can capitalize on this, this could be a powerful way to move India to be a counterweight to China
- The USA is moving much of its pharmaceutical and industry to India
- Over 200 countries have moved from China to India, including over \$50B of business

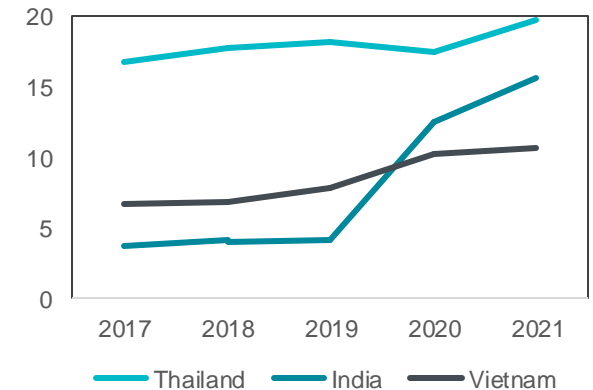
## European Pivot to North Africa

- Europe has historically relied on Russian energy since the first Nord Stream
- However, Russian sanctions have meant billions of dollars have flown out of Russia
- Since fracking is generally banned, Europe is pivoting to the Gulf and North Africa
- Libya, Tunisia and Algeria in particular
- Eni has historic ties to gas fields in Libya
- Furthermore, domestic renewable manufacturing is now a key target – moving away from China

## Unfolding Trading Lines



## US FDI into respective countries (USD\$ B)





# Market Prediction

OUR ECONOMIC OUTLOOK ON THE WORLD

ECONOMIC MACRO-TAILWINDS PROPELLING THE FUNDAMENTAL MARKET CHANGES



# Market Impacts

Trade is moving into blocs, so countries that are being fought over will win, furthermore manufacturing within developed countries will likely benefit, while the US dollar falls.

## USD rate will depreciate against CNY (8%)



- As the CNY is adopted as the currency of trade and business across more countries, this will lead to appreciation
- Furthermore, as China moves into higher levels of manufacturing it will appreciate
- Even further as capital markets grow in China this will mean short term outflows but long term inflows
- Lastly, some Gulf States are considering moving oil sales in the Yuan – this is a significant disruption of the dollar which is famously Petrol backed
- Traditionally the US is the greater supplier of arm, capital, and petrol
- As China expands this, Chinese low and middle manufacturing will be hurt

## India, Thailand, Vietnam will see accelerated Development



- Due to their natural aversion against China, these countries will receive the bulk of the benefits as the West rebases investment in 'friendly' blocs
- India especially will receive considerable support into setting up its own semiconductor industry
- Similarly, further investment from the USA will try to develop their local capital markets to allow easier foreign investment
- Further free trade agreements with India will likely see a long term growth trend under export manufacturing in India
- Likely easing of capital market restrictions in Vietnam in the next 5 years, providing significant room for growth investment with less corruption

## Emerging Market Sovereign Debt will Increase in Yield



- China has supplied African governments with exceptionally cheap debt
- This has caused a local resource and infrastructure boom
- As China is now winding down much of the excesses of its spending Africa, Sri Lanka, Cambodia, Laos, and Pakistan will likely see more expensive money
- Furthermore, default will force China to either eat the loss or pull out, which could have even worse economic conditions
- Classic warning example is Sihanouville in Cambodia where Chinese investor bought up most of the land, but disagreements with the government has led the city to have construction halted half way
- This may force select emerging countries to have to raise interest rates and default on unpayable debt

## Domestic Military Manufacturing is likely to see Further Investment



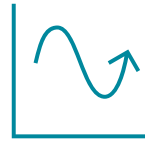
- Subsidies, Tariffs and Government Led Investment is likely to move many 'key' production areas back into the West
- In particular, the EU will likely try to repatriate manufacturing into Eastern Europe in order to maintain competitiveness
- However energy concerns will limit this and counter this until they can be relieved
- The USA and Australia will continue to invest in them and Australia especially will continue to invest further in domestic military manufacturing
- Political party power will play along closely with this
- Right Wing Parties are likely to lead to increased work and investment for military and resource industries – potential investing opportunity

# Market Prediction

Due to supply chain crunches and realignment, we believe these 8 market predictions are likely or are possible.



**Barring a Russian victory by June, Russia will collapse leading to revolution in puppets**



**Inflation will continue to rise from supply chains, will then taper before rising again with velocity**



**India will be the biggest winner from the West's realignment leading to an increased stock market**



**Utility coins for supply chains will see continued adoption and consolidation (Chainlink ect)**



**Larger trucking fleets which have capital to chase innovation will see increased ROIC**



**The Shipping industry will see another round of consolidation, especially if China limits COSCO subsidies**



**Oil, LNG, Pipelines and other infrastructure will see increased demand, a boon for large construction companies**



**Emerging Market debt will become more volatile as easy money flees it, developed commodities grow.**