



The ‘new normal’, global uncertainty and key challenges in building reliable and resilient supply chains

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1 Introduction

The world has been reminded once again of the importance of *resilience* of global supply chains, after experiencing the shocking aftereffects of the COVID-19 pandemic and the ongoing (2023) war in Ukraine. Effects include disruptions in supply chains, economic uncertainty, inflationary pressures, unreliability in transport and port operations, and shortages of several critical commodities and products all over the world. To prevent the recurrence of such unstable market conditions, governments have been burning midnight oil in attempting to find ways and means to insulate and protect their supply chains from catastrophic global events, both natural and manmade. To that effect, we re-introduce here the concept of ‘slack’, which we coined in 2022 (Kent and Haralambides 2022), or *redundancy*, as the concept is also known these days, as one of the best ways to build-in and sustain resiliency in supply chains.

There is no gainsaying in restating, or strongly emphasizing, the obvious fact that the world is heading relentlessly with increasing speed towards unalterable social change. It remains to be seen whether this represents *creative destruction* or not (Schumpeter 1942). Changes are primarily driven by increasing (albeit selective) deglobalization, climate change and technological disruption including certain worrying aspects of Artificial Intelligence. It is obvious that such changes are, to an extent, unsustainable and unequitable. Moreover, they are frequently causing disgruntlement and resentment among the populace all over the world. Such developments induce uncertainty in global markets and weaken supply chains. One of the solutions to this predicament, *prima facie*, appears to be a rapid increase in

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global trade, particularly in manufactured goods, together with a melding of cultures regarding the fate of our common habitat. A collateral benefit of this would be declining inequality and heightened levels of trust among countries.

However, to promote faster growth in trade, we need to develop “smart” infrastructural ecosystems, such as ports, in which efficiency, adaptability, improvisation, innovation and customer satisfaction, coupled with lower carbon footprints overall, would matter more than trade volumes, growth rates or revenue generation.

2 Background

The organization for Economic Cooperation and Development (OECD) has defined ‘resilience’ as “the ability of households, communities and nations to absorb and recover from shocks, while positively adapting and transforming their structures and means for living in the face of long-term stresses, change and uncertainty. Resilience is about addressing the root causes of crises while strengthening the capacities and resources of a system in order to cope with risks, stresses and shocks.”¹

However, it appears that the world is rather easily surprised, and even more easily shocked, but very slow to react. In the case of COVID-19, for instance, this led to panic and market collapse causing hardship to ordinary citizens. Our earlier research (Gujar and Ng 2023) has shown that there is a glaring lack of awareness about the importance of building resilience and robustness within the hard and soft infrastructure of global supply chains. Among others, this is manifested in our failure to train manpower to anticipate future potential risks and adopt suitable solutions. In this regard, it should also be pointed out that supply chains should be resilient both at their starting point as well as at destination; and this is not always the case.

In this context, it might be useful to delve into recent economic history. Two novel ideas and trends have emerged in the 1970s in the USA. The first, ‘globalization’, was aggressively promoted by the industrialized world, while the second, ‘limits to growth’, (Meadows et al. 1972) was largely glossed over. The relevance of the two concepts in our context can be easily understood by looking at Fig. 1: It is only recently that limits are being imposed on globalization and growth,² especially after the financial meltdown of 2008–2009. Nonetheless, many countries are still single-mindedly pursuing the mirage of untrammelled economic growth, ignoring the negative externalities of global warming and the unequitable distribution of the gains of globalization (Reinhart and Rogoff 2011).

¹ <https://www.oecd.org/dac/conflict-fragility-resilience/risk-resilience/#:~:text=Understanding%20resilience&text=Resilience%20is%20about%20addressing%20the,with%20risks%2C%20stresses%20and%20shocks>, accessed 10-10-2023.

² In October 2023, the Dutch government stopped with gas extraction in Groningen, the northeasternmost province of the country. A parliamentary committee found that, for decades, the interests of citizens had been systematically ignored in the pursuit of earnings for the public coffers and profits for the oil companies: Earthquakes caused by extraction and the consequent settling of land, had damaged 85,000 houses.



Fig. 1 Limits to growth (Meadows et al. 1972)

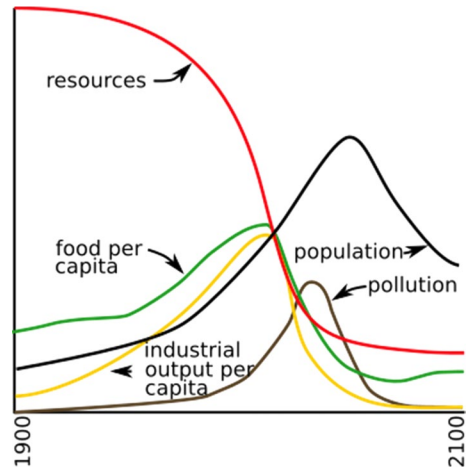


Figure 1 anticipates that various parameters of economic growth may witness a downward trend in the latter half of this century. As such, investments in infrastructure and manufacturing may not be as attractive as currently projected; hence, the need to build flexible infrastructure and lean supply chains with lower risks and, probably, reduced capacities. In parallel, it now makes more sense to have multiple suppliers/vendors as well as sources of procurement of different products (particularly intermediate ones) to avoid abuses from industry concentration and related risks.

'Smart' supply chains require continuous monitoring of trade data, to understand trends and patterns developing internationally and, thus, forecast demand for transport and allied services. This allows matching supply to demand more accurately, eliminating rapacious and wasteful investment, while promoting efficiency and productivity (Haralambides et al. 2010; Notteboom et al. 2022).

Building resilience in supply chains is a relatively underexplored area, despite the several shocks that supply chains have experienced in the recent past, in the aftermath of several catastrophic events. Hence, the urgent and dire need to explore ways and means by which stakeholders can work together to build a more secure and resilient global system of international (maritime) trade in general.³ This is the purpose

³ An example of such a supply chain stakeholder cooperation we have recently explored is *dual-transaction systems* at container terminals (Li et al. 2022). Briefly, below are some of the questions we have attempted to answer: In a dual transaction at a marine terminal, an external truck drops off an export container and picks up an import one in a single trip. However, usually, when a truck brings an export container to the port, it goes back to the hinterland empty. Or, a truck that comes to the terminal to pick up an import container, travels to the terminal empty. In both cases, we have an empty leg (a ballast leg as we would say in shipping). How could empty legs be minimized? Could a truck which brings an export container to the port go back carrying an import container to the hinterland? While unloading the ship, where should I stack a container whose pickup, dual-cycle, truck is arriving shortly? How can we coordinate exporters and importers so that a truck can be used more meaningfully, not having to travel empty in one of the two legs? Mitigating environmental impacts of road transport is here an important additional consideration. Could an internet platform, possibly with auction possibilities and blockchain technologies, offer solutions?.



of the present editorial. In the following sections, we, thus, look at the challenges the world faces while attempting to make supply chains more robust and resilient.

3 A tango of three: the political angle

It goes without saying that resilient supply chains cannot be built without the active backing and necessary willpower of the ‘political system’. At present, three countries, viz. India, China and the USA dominate the global stage, launching initiatives in almost every policy, including the development of resilient supply chains. However, their policy perspectives hardly coincide on most issues. There are other important nations too, notably those of northwestern Europe, but due to various reasons, they hardly carry the heft of the above three.

In the US, China, India and elsewhere, a major policymaking problem is in keeping ‘bankrupt’ industries and sectors alive, for apprehension to change, or in order to keep people employed. Indeed, mostly in developing countries with anaemic social security systems, keeping people in employment is a paramount policy orientation (Haralambides 2017). However, this is not without drawbacks and hindrances when it comes to efforts to reform, modernize, develop and grow the economy: Resistance to such economic priorities, due to redundant low-skill labour, or resistance to change in general, do not promote innovation either on the work floor or, more importantly, in the classroom.

The second consequence of *reluctance to change*, no matter how understandable this may be in the face of increasing economic uncertainty, is the starvation of the sunrise industry of critically valuable capital, which is consumed by archaic industries, or by an inflated public administration by and large. This further negatively impacts economic growth in most countries, particularly developing ones. Lack of long-term equilibrium growth leads to low availability of skilled labour, limited employment opportunities and university specializations, thus, giving rise to a host of issues such as migration, pollution, poverty, disease, nationalism, demagoguery, intolerance and more. All put together, these consequences result in disgruntlement and resentment among the populace, which occasionally erupts wherever and whenever the circumstances are ripe. To date, conventional wisdom has been advocating in favour of free trade in goods and services, as the most effective way to overcome the above problems. As we discuss below, however, the 2008–2009 global economic meltdown, and the COVID-19 pandemic may be reversing such preconceptions, with *deglobalization* and shorter supply chains claiming an increasing presence in economic writings (for an excellent compilation of such works, prepared for the European Parliament, see European Union 2022).

The 2008–2009 economic collapse, in particular, introduced a discernible western disdain to low-cost consumerism and a turn to the market for services (culture and arts, restoration, holidays, education, self-betterment, etc.). The negative result of this on Chinese exports became immediately evident.

Questioning the merits of globalization and free trade intensified in 2016, with the commencement of the Trump Administration in the United States; an administration characterized by populism, protectionism, isolationism and nationalism. To



the disgruntlement of many countries, not much of these tendencies changed during the Biden Administration. Introvert policies of the type “America first”; trade frictions and disputes with China; nearshoring, friend shoring and policies of bringing production closer to consumption, have all impacted global supply chains and their reliability, together with the development prospects of the Third World and the sustainability of its debt.

This said, reversing globalization towards nearshoring and friend shoring, in addition to its substantial *transaction costs*, is not devoid of political prejudice. This makes trade a lever in the geopolitical power games of a multipolar world system, heightening even further the uncertainty and unreliability of global supply chains. As a result, concepts such as ‘just-in-case’ vis à vis ‘just-in-time’ (Ng and Liu 2014) start to emerge, threatening not only the efficiency of transport logistics but the very ways of modern life and the organization of modern societies (Haralambides 2019).

Furthermore, with research and development (R&D) being USA’s major comparative advantage, we expect that there will be more attempts among US manufacturers to develop supply chains and production systems (e.g. 3D printing) which will be less labour intensive and more automated (if not autonomous). This will negate the need for offshoring and encourage nearshoring. Furthermore, with the passing of the CHIPS Act⁴ and the Inflation Reduction Act (IRA)⁵ by the US Congress, the policy intentions of the USA have become amply clear, pointing to unavoidable trade wars with China (and others). The aim here is to restrict China from developing their own high-tech industries, in areas such as artificial intelligence (AI), space, genetics and robotics/machine learning. The IRA also provides all kinds of assistance and hefty subsidies to US industry, in its objective to reduce carbon footprint. Invariably, however, subsidies are retorted by subsidies, and this jeopardizes the merits and efficiency of trade. Imposing higher tariffs on more carbon intensive imports could sound the death knell for numerous manufacturing industries dependent on selling their products in US markets.

The logic behind such American policies is quite simple: by keeping China from developing high-tech industrial capacity, China would find it difficult to avail itself of scale economies. In addition, China would, presumably, also face difficulties in developing alternative production and supply chains in a relatively short period of time. Without any doubt, this is a problem that will invoke an aggressive response from China and quite rightly so, as such policies imply loss of comparative advantage. Ultimately, it will be the end-users to bear the costs, with higher expenditures even for the most basic commodities.

The US is obviously aware of the huge population and economic size of both China and India. It is also aware of the rich cultural background of both countries which can make them strong enough to tackle a US hegemony on the world stage (see below). Obviously, the US would like to hold back, if not eliminate, the rise of such a tripolar global system. The country is also not too keen to freely share its technological prowess. The US would in other words demand to be treated as first

⁴ <https://www.congress.gov/bill/117th-congress/house-bill/4346>.

⁵ <https://www.irs.gov/inflation-reduction-act-of-2022>.



among equals. This is unlikely to be accepted by either India or China and here is exactly where the US and China –probably India too– are drawn into potentially serious long-term conflict. This conundrum does not allow the development of common policies (or thinking), necessary for resilient supply chains.

But, while focusing on the big three, one cannot ignore a handful of countries who have played a major role on the world stage in the past. Take for instance the case of Russia, UK, Germany, France, Japan, not to say anything of Turkey, Vietnam, Australia, Canada or Italy. Without the active cooperation from these players, it is difficult to imagine how we can reinforce supply chains and make them more resilient.

4 Maritime security—call of the seas

In today's world, global supply chains cannot be made resilient without keeping sea lanes open, thus, safeguarding the *freedom of the seas* doctrine. It should be noted that maritime- and economic security go hand in glove. According to an International Maritime Organization (IMO) report on climate change and livelihoods, in Southeast Asia alone, over 200 million people depend upon the sea for their livelihoods. In addition, several maritime industries dominate the economies of their respective countries such as shipbuilding, shipbreaking, offshore oil and gas, tourism and fishing (AON 2012).

The term “security” has become ubiquitous in contemporary parlance. However, in both academic and policymaking circles, confusion abounds as to the definition of the term. The word means different things or conditions to different people in differing circumstances (Booz Allen Hamilton 2003). How should, thus, security be perceived, enacted and implemented? In his seminal work *The Evolution of International Security Studies* (Buzan 2009), Barry Buzan views security in multidimensional levels of analysis such as individual, national and international (both regional and system wide), and from a military, political, societal, economic and environmental perspective.

The security of both individuals and community is the responsibility of the State and the supra- state (e.g. the European Union). As such, it is the duty of such entities to protect the individual and the group from externally and internally generated “threats.” The State may discharge its security function by creating an environment of a “Rules-Based Order”. By this, or by “Rule of Law” as the concept is alternatively known, it is usually understood the sacrosanct, pervasive and undisputed application of liberal, political and economic rules and laws, resulting in a societal ‘order’ which uniformly and unambiguously understands, accepts and respects them to such a degree that ‘enforcement’ becomes of a lesser concern.⁶

As a result of its international character, making the application and enforcement of national laws difficult if not impossible, international shipping is still far

⁶ For instance, in certain countries, the *penal code* consists of a number of volumes; in the Netherlands, it is just a few pages.



from such an 'ecosystem' and this gives rise to a miscellany of deviate behaviours, including security breaches and similar threats. In particular, the industry lacks not only a consensual development of rules and regulations regarding the various uses of the sea and its resources which are equally applicable to all, but it misses also a uniform implementation of such rules. In addition, 'rules' should also address procedural, policing and jurisdictional issues acceptable to all stakeholders. However, one cannot overlook the ironical fact that the more security is sought by individuals (and provided by the State), the greater the extent to which freedom must be compromised and vice versa. In defining security as a measure of "*the absence of threats to specifically stated values by the government,*" Bichou et al. (2013) indicate the potential for confusion when the term 'national security' is used liberally and in a generic manner.

It is generally accepted that the overall process of international trade (i.e. the global supply chain) is most efficient when it is relatively free. This often implies an unfettered freedom of sea lanes, passing through the jurisdictions of several states. At the same time, however, and as Adam Smith himself recognized in his *Wealth of Nations*, maritime security does not only concern smuggling, or acts of piracy or terrorism against commercial shipping but, perhaps more importantly, its primary preoccupation is with the defence of national assets and interests. Smith therefore advocated the enactment of international laws such as the Freedom of Navigation Act, the protection of fisheries and preserving the monopolies of trade granted by the Sovereign.⁷

Escalating incidents of piracy, terrorism, drug, illegal immigration and arms use, in their ever-evolving manifestations, have become the bane of seafarers. Incidents of smuggling contraband are counterproductive to efforts of promoting economic and trade policies. Such maritime security challenges are essentially asymmetric in nature and hence difficult and costly to tackle. Among them, the currently burgeoning issue of illegal immigration adds to the complexity of issues, slowing down supply chains due to multiple checks by border and customs authorities, thus, making supply chains more uncertain and less resilient.

Another issue that complicates the situation further with respect to security is the considerable dissimilarities between capabilities and competencies of the littorals, especially if one considers that nearly 100,000 ships, carrying all kinds of cargo, are traversing the oceans annually. The straits of Malacca and Hormuz facilitate over 80% of these ships, making the Indian ocean region, in particular, even more important. These facts underline the important need for an appropriate international maritime security policy. Unless carefully thought out, however, the restrictions such policies will place on the freedom of movement at sea may make supply chains less resilient.

The rise in seaborne trade has adversely impacted the security policies of several sovereign states due to the emergence of all types of threats including asymmetric

⁷ The latter has been termed "gunboat diplomacy" by several authors. At the time of writing, a parliamentary inquiry is taking place on the riches the royal families of the Netherlands have amassed over the past three centuries from colonialism and the slave trade.



ones such as piracy/terrorism. This increases the costs of trade and influences the economic indices of a trade-dependent state and its economic development. Pirates/terrorists too have become savvier and have started using high-tech equipment which enables them to carry out attacks at distances of up to 1,500 nm away from their home country base. (A case in point is the 26/11 attacks on Mumbai). This in turn has increased the costs of deterring piracy/terrorism, necessitating more sophisticated naval vessels and patrol boats. The effectiveness of such boats is, however, questionable due to numerous policy and technical constraints placed on them by international organizations like the United Nations. In addition, the lack of sharing of actionable information between nations does not help either.

Pollution-related disasters at sea are a serious concern too, not only for the marine environmentalists but for security analysts as well. While environmentally speaking such events create mayhem with the marine ecology, security concerns abound, with disasters affecting free flow of trade and shipping (APEC 2002).

Countering transnational security threats requires cooperative approaches between the littorals, together with assistance from countries more capable in capacity building. Finally, it is the political will and the willingness to cooperate and help in terms of capacity building that will matter the most. This will eventually help in overcoming transnational threats at sea and ensuring freedom of navigation.

5 Resilience in the port ecosystem

Close to two hundred million containers are exported each year in the world and nearly a billion are handled in ports. If we exclude, say, 200 million empties, also handled in ports, these numbers mean that each export container is handled 4 times until it reaches the final consignee: export, import and twice at transshipment. The four-to-one ratio used to be three-to-one a few years back. This implies higher port concentration and more transshipment at hubs. It also means, however, more outsourcing of production and longer supply chains. In addition to China, outsourcing of production now takes place at low-cost coastal regions around the world, notably, in India, Bangladesh, Vietnam, Indonesia and more. Such regions are often *special economic zones*, like Shenzhen in the Pearl River Delta of China, offering traders and users a miscellany of benefits, consisting of light manufacturing, reassembly, packaging, tax treatment, storage, distribution and priority in re-exportation. Benefits are also realized in transportation and supply chain performance.

In earlier times, ports used to be ‘city ports’, particularly in cities blessed with a river. Growth in trade and ship sizes eventually obliged them to move downstream, to river estuaries, where more space and water depths were available. Cities, thus, became ‘port cities’ (Haralambides 2021). Of recent, however, one observes a reversal of that trend, with port activity returning to the hinterland in the form of *dry ports* or inland ports, inland clearance depots, inland container terminals, freight villages, inland customs depots and inland cargo centres; names the dry port concept is also known.

The reasons for this course inversion (from downstream back to upstream) are not difficult to understand. Port competition and the ensuing need for higher efficiency



and productivity meant that the container could no longer stay at the terminal for long, to be stuffed, stripped, or stored. In many cases, neither could throughput and trade be held hostage by strongly unionized port workers' unions. Terminals needed to be fully automated transit points, where the dropping (export) and picking up (import) of containers would take place through *just-in-time* operations. An export container, therefore, would have to arrive at the terminal, if possible hours before ship departure. This type of port terminal setup,⁸ however, has been a bone of contention for many governments: When asked to provide funding for new port investments, a typical question from them has been: "why should I do this, when benefits are not localized but dispersed in the four corners of the earth? What is in it for me and the employment prospects of my citizenry?" (Benacchio et al. 2001). The answer has not been difficult, though, at least not among those who understand the 'port ecosystem': "thanks to the port, a whole industrial complex has evolved around it, and this is where you should be looking for your 'value-added, and not at port operations per se'" (Haralambides 2017).

Preparing the container for this 'transient' state of affairs at the terminal, became the task of the *dry port*. A dry port is not much different from a seaport terminal; the main difference is the lack of water at the former. Nonetheless, the dry port provides most of the services of a container terminal such as stuffing, stripping and storing of containers, customs inspections and clearance. Security of operations is important here too, as the facility should be able to receive and dispatch cargo by all means of transport, predominantly and preferably, by rail.

In large countries such as India, China and Brazil, or in archipelagic countries like Indonesia and The Philippines, the location of the dry port is a critical decision and a fertile research area.⁹ In short, the parameters that play a role in this decision comprise distance from the port terminal(s); rail links and suitable shunting stations; motorways; inland waterways (if they exist); but also distance from population-, consumption- and production areas. In India and in many other countries, wrong dry port locations and pricing decisions (*vis à vis* seaport terminal pricing) have led to dry port underutilization if not outright failure. All in all, an efficient port-dry port system optimizes supply chains, making them at the same time more resilient.

Concentration in ports and concentration in shipping are two trends which have been evolving in tandem and in a 'chicken and egg' question: Do big ships require bigger ports, or is it that bigger (and more efficient) ports entice ships to become bigger? For long, our answer has leaned on the latter scenario (Haralambides 2019). In whatever case, mega-ships and mega-ports are a reality, albeit one not always the preferred choice of shippers and consignees who, other things being equal, would prefer less transshipment, with their container as close to them as possible. After all, transshipment does not come cheap in trade costs, and this is a parameter not always

⁸ i.e. a fully automated configuration resembling a motorway motel where the traveller would just stop to sleep and then move on, leaving little value-added behind, *vis à vis* a city hotel.

⁹ In our earlier work (Zhao et al. 2019), we looked at the hundreds of ports along China's Yangtze River, establishing dry port locations that could allow river-ports to serve directly international trade, bypassing the hub (Shanghai) at the estuary.



taken into account, nor is the cost of the externalities of road transport, caused by excessive transshipment. In ports too, mega-ships are becoming an increasing headache in cargohandling operations, even at downstream mega-seaports, and we have clearly witnessed this during COVID-19, with the bigger call sizes as a result of blank sailings.¹⁰

It is obvious that mega-ships ply mostly on certain east–west routes and between mega-hubs. Over the years, these ports have strengthened the market position by carrying out pre-emptive investments and related pricing (quay walls; dredging, last-mile links; latest generations of ship-to-shore cranes, etc.) aimed at attracting increasingly larger ships, thus, consolidating their market position even further. More often than not, such investments have been financed by public coffers. This, naturally, frustrates the aspirations of other ports who see themselves as pivots of regional development, while most ports in emerging economies have lost out in this regard, facing serious challenges going forward.

In the developed world instead, port administrations have been assuming a much wider role, beyond mere cargohandling operations, as ‘network managers’ (Verhoeven and Vanoutrive 2012). This has involved stronger, clearer, consensual, and in general, more effective stakeholder management, as well as investments in inland terminals and related facilities at the port domain and beyond (internationally). Focus has therefore shifted from cargohandling operations to the big shippers, consignees and freight forwarders. To attract them, ports started providing value-added services, such as warehousing, inventory control, road- and rail transportation. The evolving AI revolution is expected to provide additional solutions in improving efficiency and assurance, verifiability and security of information exchanges which are critical for the resilience of global supply chains. This, however, will only increase further the gap in asset endowments and competency levels of ports in the developed- and developing economies.

Currently, most ports in developing countries are characterized by obsolete equipment, hierarchical organizational structures and an institutional framework that is in variance with the concept of resilient global supply chains and Blue Economy (Gujar and Ng 2023). Governments too are not too keen to allocate the scarce resources required for port development, assuming such resources existed. Instead, they would rather hope the private sector expressed its interest. But the latter may be equally reluctant because of rigid labour laws and regulations, along with higher quanta of investments required; something that would increase the risk of their investment significantly. Hence, the private sector, including international donors, has been constantly requesting amendments in national port policy and other institutional reforms.

Trade growth expectations, however, have started to change the above rather pessimistic scenario. Container traffic is expected to grow at about 4% p.a. in the current decade (2020–2029). To prepare the infrastructure for this, various governments in developing countries have allowed 100% FDI and full operational autonomy to

¹⁰ For a full exposition of Economies (and diseconomies) of Scale in shipping and relevant ‘optimum ship size’ considerations, the reader is referred to Haralambides (2019).



foreign concessionaires. As a consequence, their port sector has managed to attract USD 85 billion between 2000 and 2018 (UNCTAD 2019). Unfortunately, much of this financing dried up due to COVID-19 and needs to pick up again at a brisker pace.

In several developing countries, there is a dire need to construct high quality infrastructure, necessary for transporting heavy containers to their final destination from their points of entry (port). Such carriage of containers needs to be conducted seamlessly and at optimum speeds, without congestion and delays, otherwise the benefits of containerization would be withered. To avail such benefits, a country needs to invest heavily in the required infrastructure (roads, ports and allied lifting and transportation equipment). The issue here, however, is that such investments have long gestation periods while, at the same time, investors and financiers expect a faster return on their investments. This, it is believed here, might be one of the motivations behind China's BRI investments in ports around the world: Faster and adequate returns on capital, instead of prioritizing infrastructure development in the relatively underdeveloped northwestern part of the country (Haralambides and Merk 2020).

As a concluding note to this section, one would be amiss not to mention that the tremendous growth in seaborne trade would not have been possible without the infrastructure support provided by Information and Communications Technologies (ICT). But it is these very technologies that make global supply chains vulnerable to attacks by malwares, ransomwares, phishing mails, hacking of systems and viruses. Several shipping and port organizations have had to face such attacks in the recent past, paying huge amounts of money as ransom. Working from home, introduced by COVID-19 contingencies necessities, multiplied such threats, due to the greater vulnerability of home-computing. Installing sophisticated and expensive firewalls and cybersecurity solutions renders computer systems safer but also slower. In spite of its various promises, Artificial Intelligence will bring with it new types of threats and risks yet to be fathomed and regulated pre-emptively, before they *do* emerge.

6 The pandemic and its aftereffects

One of the consequences of the pandemic was the slowdown in global production and international trade in the first half of 2020. The decline was short lived, however, and demand picked up in the second half of that year. In a way, the COVID-19-induced decline in demand for certain things like travel, restoration, holidays (and their induced effects on the overall economic system of the country), were compensated by lockdown-induced purchases such as computer peripherals and allied equipment, mobile phones, garden and home-improvement materials and, of course, pharmaceutical goods and medical equipment of all kinds (Cullinane et al. (forthcoming) 2023).

Furthermore, inventories, drawn down in the first half of 2020, during the various forced lockdowns, were replenished in the second half of 2020. Finally, one could not but stress the effects on demand of the excess spending, made possible by the generous financial support packages, enacted all over the world to ameliorate



the employment effects of COVID-19. This, it is believed here, has been one of the principal causes of the inflation that ensued, unfolding hand in glove with shortages of all kinds and an increasingly unreliable supply chain.¹¹ Of course, it has been the unreliability of supply chain components (including port congestion) that has given ground to ideas of shortening global supply chains through such things as nearshoring.

But to return to the post-COVID-19 demand bonanza: One of the sectors that did unexpectedly well was liner (container) shipping. Freight rates reached astronomical levels, not very dissimilar to those of the ‘golden years’ of shipping (early part of 2000s). Carriers initially reacted to the pandemic by removing capacity from major trade lanes, something colloquially termed *blank sailings*. Numerous port calls were cancelled, while demand was served by bigger ships with bigger call sizes. This type of traffic added an additional headache to terminal managers due to the diseconomies of scale present in the handling of larger ships and call sizes. If one would couple this with the unreliability of shipping schedules; slow-steaming tactics and longer routes chosen, that period’s port and shipping landscape becomes clear: Shippers have now had to pay prices up to ten times their long-term average, assuming they were able to secure a container (or a berth). Demand for containers was so high in Asia that carriers would prefer to send them there empty, instead of making them available to American and European exporters.

Grievances of western shippers followed, together with requests for regulatory intervention in the EU, USA, China and Australia. Even President Biden was convinced, seconding their voice.¹² On the 16th of June 2022, the President signed into law S. 3580, the “Ocean Shipping Reform Act of 2022,” tasking the Federal Maritime Commission (FMC) to exercise greater diligence in their control over ‘undesirable business behaviour’ by carriers. The President’s angry response followed the years-long, albeit lukewarm, assessments of FMC and the Department of Justice (DoJ), according to which “*there was nothing ‘sinister’ in the behaviour of carriers, which was merely due to market forces and to the excess of demand over supply*”.

With hindsight, it might not be unreasonable to say, however that the ‘regulator’ was right and the rate boom was just a matter of demand–supply disequilibrium: At the time of writing (July 2023) rates had again collapsed to unsustainable levels. Indeed, if ever there were ‘concerted actions’ among carriers, apparently they have not been very effective.¹³

¹¹ At the time of writing (July 2023), delivery of a Toyota Yaris would require 12 months; in Thailand, tourists were facing water shortages; and in Greece over-tourism was sending tourists away.

¹² The President publicly stated: “...nine major shipping companies consolidated into three alliances control the vast majority of ocean shipping in the world and each of these nine are foreign-owned. During the pandemic, these carriers increased their prices by as much as 1000% while families and businesses struggled around the world. These carriers made 190 billion dollars in profit in 2021, 7 times higher than the year before and they raked in the profits, and the costs get passed on as you might guess, directly to the consumers sticking it to American families and businesses. These foreign-owned carriers have also been refusing to carry American-made products back to Asia...”

¹³ For the regulatory oversight of shipping consortia, alliances and conferences, as well as for the economic rationale behind the leniency of the regulator towards these types of concerted behaviour, readers are directed to Haralambides (2019). In short, as the argument goes, in declining average cost industries, such as liner shipping (i.e. industries of high fixed-, low marginal costs), unfettered price competition on



7 Conclusion

The 2008–2009 global economic meltdown; the worrisome war in Ukraine and in the Middle East; and the aftereffects of the COVID-19 pandemic have gravely impacted the world, introducing a *new normal* of higher uncertainty and unreliability. With it, novel methods for studying, working and entertainment have been adopted and will probably be in vogue, in some form or other, in the foreseeable future. These trends have put on hold many plans for expansion and growth. Long-term, sustainable, growth plans are becoming scarcer in policymaking. Instead, short-term 'survival' tactics are now the daily preoccupation.

A particularly vexing economic issue, difficult to ignore, is the astronomical financial resources earmarked globally for fighting COVID-19. Monies have been especially set aside for mitigating the pandemic's effects on employment (Cullinane and Haralambides 2021) at the cost, however, of creating inflationary pressure not seen before since the 1970s. Many governments around the world issued spectacular amounts of debt -on top of their existing and often unsustainable public debt, while their economies continued to sputter. This dual pincer has practically bankrupted several developing countries and the only solution appears to be wholesale debt write-offs by the western countries and the issuance of fresh debt by their global financial institutions. Naturally this will involve political trade-offs, without probably eliminating inflationary pressure and collateral effects. Whether the world has the collective wisdom to handle this situation remains to be seen.

Finally, the effects of the explosive growth in advanced technologies (e.g. new-generation of semiconductors, Artificial Intelligence, 3D printing, etc.), together with manifestations of the 'new normal' (teleworking, localization vs. globalization, nearshoring and friend shoring), taking place all over the world, have found fertile ground and possibly led to renewed economic and technological frictions from north to south and east to west. There is a clear intention of the current US administration to bring back to the US (possibly to Mexico too) at least a part of their overseas industrial production, thus, minimizing the risk of over-dependence on China. The Americans call this de-risking, avoiding calling it *decoupling* which is what it should be called.

Such trade policies, if implemented, will raise the heckles of China and other emerging economies who have invested heavily in building huge manufacturing and allied capacities. They will naturally react by protecting their own economies even further, in order to retain the comparative cost advantage which they currently possess. This will lead to further distortion in global markets which is hardly desirable at the moment. Such issues need to be redressed before global supply chains can again become reliable and resilient. In the absence of suitable rectifications, we can expect to see erratic and unequal trade growth, lesser capacity creation (along with the ensuing congestion), as well as poor utilization of existing capacities.

Footnote 13 (continued)

marginal cost could become destructive, to the detriment of trade. Some self-regulatory allowances in terms of price-fixing (conferences) and/or capacity management (alliances) are, thus, necessary, albeit under the discerning eye of the regulatory watchdog.



8 In lieu of an epilogue: can India replicate the Chinese export-led economic growth model?

(the above exposition, and our indulgence in the two giants, made us think that an epilogue such as this would be a reasonable expectation, appreciated by our readers).

It is no secret that China is breathing down the neck of the West: technologically, militarily and, overall, economically. Relevant to this journal, one could mention as an example that, at the time of writing, China overtook Greece as the number one maritime nation in the world (in terms of gross tonnes); an accolade Greek shipping had proudly preserved for decades.

In their efforts to hold back China's emerging might, the West, under the over-impinging leadership of the USA, has been trying to woe India into the western camp, as a counterbalance to her big neighbour. Such US advances have included the sharing of technological knowhow; massive investments in India; shifting of manufacturing bases from China to India; opening western markets a bit wider to Indian products and more.

Individual countries of the western camp have been 'diplomatically coerced' to do the same, even if this involved just 'lip service' in official visits, trade delegations and newspaper articles. For instance, at the time of writing, Narendra Modi, Prime Minister of India, was visiting Greece, on his way back home from a BRICS meeting in Johannesburg. The rhetoric on both sides included statements on the role the Port of Piraeus could play as an Indian gateway to Europe. Entertainingly, it was never mentioned, perhaps because this is known to all, that, operationally at least, the port of Piraeus 'belongs' to China and the ships of COSCO Shipping, together with those of her Ocean Alliance,¹⁴ have turned this, once internationally insignificant, port into the most important port of the Mediterranean Basin, one of the most important ones in Europe and in high places in international port rankings. India's shipping prowess, instead, remains yet to be established and one might therefore legitimately wonder what exactly the meaning of a 'gateway' is.

India, on her part, an unparalleled pupil of British 'governance skills', knows well how a 'balancing act' must be played and it plays it well. This became evident in India's position on the Ukraine war: «the solution», Narendra Modi said while publicly addressing the Greek people, «is to be found in diplomacy and negotiations». In plain English, this translates into: India will never take sides in USA led economic and military alliances against China. With regard to the latter (military) alliances, India vigorously fends-off external meddling: the country's maxim has always been that the whatever border disputes may exist between Her and its neighbours, they can only be resolved bilaterally and third-party mediating volunteers are not welcome.

Could, thus, western wooing strategies succeed? Or will the West be disappointed again as it happened with Africa, whose links to China are now difficult to reverse, due to western lateness if not negligence?

An impulsive answer would be 'yes', particularly if one looks at the positions prominent Indians hold around the world. Among many others, of course, notable examples comprise Kamala Harris (Vice President of the United States);

¹⁴ CMA CGM (+APL), Evergreen, OOCL, Cosco Shipping.



Rishi Sunak (Prime minister of the UK); Priti Patel (Home Secretary of the UK); Sundar Pichai: (CEO of Alphabet Inc.—Google's parent company); Satya Nadella (CEO of Microsoft); Arvind Krishna (Chairman and CEO of IBM).

Before answering the question, however, one must remember that both India and China were ancient, civilizations with a magnificent history, at times when Europe was still in the dark ages and the USA did not exist. In those days, the two countries were sharing among themselves 50% of world GDP. Subsequently they slipped behind, mainly due to the *industrial revolution* in Europe, steel, steamships and Europe's 'gunboat diplomacy' around the world. As such, it is now well understood that neither China nor India would be coerced into courses of action that would go against the long-term welfare of their peoples, at least the way 'welfare' is understood by each of them.

This said, and despite their historical achievements, the two countries are very different in their societal values, culture, work ethics and governance systems: The Indian people are equally aspiring as the Chinese, but they are less skilled, less disciplined and less productive. Both countries, with their own mindsets, are surging ahead, making remarkable progress in technology and commerce. In August 2023, India became the fourth country to land her spacecraft on the moon.

One area, however, where India is light years behind China is *infrastructure*. This makes Indian exports -as well as manufacturing output in general- less competitive. This is exacerbated by the country's vast expanse, the consequent challenges in transport and distribution, and a lack of economies of scale in manufacturing. One might add here that Indian exports of manufactures -half of the country's total exports- are of low value, thus, contributing little to India's foreign revenues, particularly when compared with the other half, i.e. exports of services.

This brings us to the *tricky* question of 'political economy' and governance systems; i.e. China's one party rule vis à vis India's messy democracy. The former has enabled China to surge far ahead of India in the past two decades. One might perhaps remember that Deng Xiaoping lifted 800 million Chinese from poverty, while India may still be struggling with the provision of electricity and refrigeration in many parts of the country.

India will move ahead. But so shall China. Anecdotal evidence suggests that if India were to grow each year by 2% over and above the growth of China, it would take her 85 years to catch up. The two countries will increasingly compete, but it is our conviction that it will be long (if ever) before India could pose a serious threat to China. Western efforts to change this status by propping up India, although well understood, shall, thus, be just *tilting at windmills*.

Hercules in Athens, Girish in Bombay.

August 2023.

Data availability N/A



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