

Chapter 1

The Economics of Resilient Global Supply Chains in the Post-COVID-19 Era

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ABSTRACT

The global expansion of supply chains between 1990 and 2010 was characterized by efficiency-seeking through extreme specialization, task fragmentation, and geographical dispersion. Such chains, while offering cost benefits, are vulnerable to damaging disruption when operational conditions shift. The COVID-19 pandemic has initiated a reconsideration of supply chains with calls for enhanced resilience. These calls coincide with a growing fragmentation of global production and supply chains with China's increasing influence in global standards, supply of intermediate inputs, and domestic economic upgrading. This chapter examines the growth and vulnerabilities of lean global supply chains, arguments for greater resilience, and the cost implications of supply chain restructuring at a time of growing uncertainty and possible geographic fracture.

INTRODUCTION

The COVID-19 pandemic provided a stark illustration of the vulnerabilities of international business activities when environmental conditions change. Such vulnerabilities were particularly evident with critical shortages of both essential equipment (PPE and vaccines) (Gereffi, 2020) as well as industrial and consumer products (electronic components, whiteware products). Also clear was an overdependence on China as a global production and supply base with the virus outbreak disrupting manufacturing across significant parts of the country (Evenett, 2020). The negative economic impacts of COVID-19 have been particularly strong in internationally-oriented sectors such as tourism, air travel and shipping. These disruptions have been exacerbated by other underlying concerns including the growing pressures on global infrastructure and resource depletion.

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The globalization wave initiated in 1990 by the collapse of the Soviet Bloc and rise of large emerging economies saw the value of global exports increase five-fold between 1990 and 2020. The current global infrastructure, much of which is now more than seven decades old, has struggled to deal with this rise in cross-border commerce, as evidenced by the stranding in the Suez Canal of the giant Ever Given container vessel in March 2021. The resource implications of three decades of hyper globalisation have also been immense: huge increases in natural resource and habitat depletion; continuing climate change; and alleged wasteful consumption as product prices fell.

These issues, exacerbated by the global pandemic, have renewed interest in the apparent trade-offs between global supply chain efficiency (but vulnerability) and resilience (Golgeci et al., 2020), how greater resilience might be achieved (Reeves & Varadarajan, 2020), and how any resulting costs could be shared (Fonseca & Azevedo, 2020).

It is useful to distinguish between the security and resilience of a system such as a global supply chain. Security refers to the ability to maintain the integrity of a system, while resilience is concerned with the ability to react and respond to a disruption. While the two characteristics are seen as desirable, they may be incompatible.

For example, while moving to multiple sources of supply may increase resilience through continuity of supply, it is likely to increase the difficulty of achieving security. This chapter examines these questions suggesting that a move away from the efficiency focused supply chains of the recent global wave will require significant geographical and relational restructuring, likely adding to the costs of internationally produced goods.

The arguments underpinning the discussion are developed in eight substantive sections. The first substantive section addresses the economic underpinning of current global supply chains with their efficiency imperative. Section 3 examines the vulnerabilities that such chains contain. This is followed by a discussion of the various resilience strategies that could be adopted and the role of both firms and policy makers in this process. Section 5 examines the costs of supply chain reorganization and the question of whether such costs are likely to be absorbed by producers or passed on to consumers. Section 6 examines possible constraints on supply chain restructuring in an increasingly fractious international business environment defined by trade and investment disputes, techno-nationalism, possible global fracture, and hegemonic competition. The limited evidence on corporate reconfiguration of global supply chains is presented in Section 7. Concluding comments are offered in the final section.

THE DEVELOPMENT OF CONTEMPORARY GLOBAL SUPPLY CHAINS

In the contemporary global economy, the terms global supply chains or global value chains are misnomers. The reality is that such chains, characteristic of linear, integrated and conceptually relatively simple production processes, began to disappear in the 1960s with the decline of large and hierarchically integrated factories such as Ford. Growing competitive pressure, the introduction of new production approaches such as Just-in-Time and increasing recognition of the contribution of specialist external suppliers brought radical change to production systems. These changes were facilitated by revolutions in communications and control technologies (lower cost air travel, digitalisation) and transport (containerisation, inter-modal hubs) that enabled an extension of specialisation or what Baldwin (2016) has termed ‘unbundling’.

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