The Changing Contours of Global Value Chains post-COVID: Evidence from the Commonwealth

Abstract

The COVID-19 pandemic emphasised the global value chains (GVCs) debate by focusing on whether gains from GVC participation outweigh firms associated risks of demand and supply shocks amid rising protectionism. This paper bridges the gap between the international trade and management literature by examining the impact of COVID-19 on Commonwealth countries, an area that has received scant attention in academic literature. Using the Eora database, we simulate scenarios to examine Commonwealth countries' participation in GVCs post-COVID. We draw on the transaction cost economics (TCE) theory to develop a framework that investigates whether growing protectionism, associated with reshoring, decoupling and nearshoring, could potentially affect the constellation and participation of Commonwealth countries in GVCs post-COVID. Results show that trade protectionism is likely to impact the supply chains and lead to GVC reconfiguration, which could offer opportunities for the Commonwealth countries and firms to potentially gain following the geographical redistribution of suppliers.

Keywords: COVID-19, Commonwealth, reshoring, decoupling, global value chains, protectionism

1. Introduction

More than two-thirds of global trade occurs within global value chains (GVCs). The linkages of countries through GVCs mean that the output of one firm in a country is used by another firm in another country to produce a more complex product, which in turn may be used by another firm for further processing before being consumed as the final products (IDE-JETRO, 2019). The growing interdependence and integration of national economies, which is a feature of an increasingly globalised world economy, have prompted multinational firms to increase and diversify the geographical interlinkages, integration and complexity of supply chains (Antràs & Chor, 2013). GVCs have created new opportunities for small firms from emerging-market economies and developing countries because participation in supply chains means firms are not required to master all stages of complex production processes to participate in the global economy (OECD, 2021). While the reconfiguration of firms' interlinkages has improved operational efficiency, it has also enhanced their vulnerability to systemic shocks, such as trade wars and the COVID-19 pandemic. In the current uncertain business context, analysing GVC trade prospects is relevant in light of rising protectionist trends attributed to geopolitical tensions, such as in the Indo-Pacific region, and the China-USA conflict (Cattaneo et al., 2010). These trends have been further accelerated by the COVID-19 pandemic that led to simultaneous supply and demand shocks, resulting in an unprecedented contraction in global trade which in turn impacted GVCs. Further, the pandemic affected transportation between production units and fuelled the resurgence of the greater self-reliance debate. From the GVC perspective, ongoing protectionism trends are associated with 'reshoring' and 'decoupling' (reducing the dependency on suppliers located in 'unfriendly' countries) and 'nearshoring' (move segments to countries that are 'closer' politically) (see Antràs, 2021; Bair, 2008; Crang et al., 2013). This said, decoupling and deglobalisation (reshoring at home from previously offshored activities) are not (yet) a reality (Antràs, 2021) despite the 2022 Ukraine-Russia

conflict, which has dramatically increased geopolitical tensions, resulting in trade and investment embargoes.

The configuration of GVCs is a lengthy process accompanied by massive changes, as evidenced by an extensive transformation of the textiles (Zhang et al., 2016) and automotive sectors in the 1990s (Sturgeon et al., 2008). However, the last decade witnessed a widespread change in the complexity of GVCs, as well as the growing importance of corporate social responsibility in their design and management. The literature attributes such changes to institutional and macroeconomic factors, which include, among others, growing protectionism (Juergensen et al., 2020), sustainability (Campling & Havice, 2019; Pananond et al., 2020), technological advances (for example, additive manufacturing in Hannibal and Knight (2018), big data (Strange and Zucchella (2017), and disruptive events with a low probability of occurrence but with a high impact (such as the 2008 global crisis (Cattaneo et al., 2010), the earthquake in Taiwan in 1999 (Papadakis, 2006)). The impact of the COVID-19 pandemic is an example of a disruptive event that has reverberated shocks through GVCs (Ali et al., 2022; Mostafiz et al., 2022; Pla-Barber et al., 2021; Verbeke, 2020). Gereffi (2020) comments that the recent studies analysing the impact of the pandemic are either conceptual or limited to a particular sector and focus on firms' performance, but do not examine the likely reconfiguration of GVCs.

This study contributes to the academic literature by examining the impact of COVID-19 (that is an unprecedented disruption) on GVCs from a business perspective and proposes a coherent framework to analyse the participation of Commonwealth countries in the GVC constellation.

The Commonwealth, an informal grouping of 54 countries, with a combined gross domestic product (GDP) of over US$10 trillion, registered a decline of nearly US$1.15 trillion in GDP during the pandemic. The member countries' exports of goods and services were valued at US$3.4 trillion (in 2013), which is about 15 per cent of the world's total exports. Almost half

came from developed country members, but others have collectively grown their share – from 36 per cent to just above 50 per cent – since 2000. Studies suggest that Commonwealth countries enjoy a 'Commonwealth advantage', which translates into gains when they trade with one another. In terms of gains, evidence suggests that Commonwealth countries' trade and investment were higher by 20 and 27 per cent, respectively, and bilateral trade costs were lower by 21 per cent when these countries traded with each other (Khorana & Martínez-Zarzoso, 2018).

This paper examines two inter-related research questions. First, what were the levels of pre-COVID trade connectedness and economic interdependency between Commonwealth countries (macro) – that is, the extent of GVC linkages between Commonwealth countries – by examining 'who produces for whom'. Second, how are trade conflicts likely to impact the configuration of GVCs for the Commonwealth? Drawing on knowledge from the international business, economics and organisational theory domains, we use simulation techniques to examine how the COVID-19 pandemic is likely to impact future trade within GVCs for the Commonwealth countries at a macro level. Through the lens of the transaction cost economics (TCE) theory, the paper looks at the growing debate about growing protectionism, which weights firms' (micro) decisions on reshoring and decoupling with nearshoring, and how this could change the constellation of Commonwealth GVCs post-COVID. The analysis covers the period from 2009 to 2015 and presents post-COVID forecasts on trade volumes for 2025. Our simulations were based on a demand-driven gravity model, which took the expected changes in the volume of imports from individual countries as a starting point and factored in demand variations to influence the volume of exports from trade partners.

The paper makes two contributions to the Commonwealth GVCs literature. First, we empirically disentangle Commonwealth countries' supply chains using input-output (IO) techniques to map and highlight the geographical dimension of GVCs for these countries.

These estimates present an overview of how GVCs have evolved for Commonwealth countries and map the dynamics of trade linkages by drawing on recent literature (Escaith et al., 2020; Espitia et al., 2022; Hayakawa & Mukunoki, 2021) to show where value-added is created, how much is added and by which country. The data were taken from Eora data for 2015. Second, we contribute to the wider GVCs debate on reshoring, decoupling and nearshoring in the post-COVID era from the Commonwealth perspective. Studies confirm that the impacts of COVID-19 on a country or region depend on its economic size, ability to cope with uncertainty, as well as the degree of participation and linkages between countries through GVCs (Maliszewska et al., 2020; Sforza & Steininger, 2020). Thus, it is important to examine the Commonwealth GVCs debate, which could pose a challenge for large multinationals that may have to adapt their supply chain strategies to bear the impact of the pandemic and develop new initiatives for greater resilience. The results of our analysis comment on how Commonwealth countries are likely to benefit from potential supply chain diversification, in light of ongoing geographical redistribution by European and American firms to source inputs in an era when protectionism is increasing.

The remainder of the paper is structured as follows. Section 2 reviews the relevant literature on GVCs and provides a theoretical framework within which to contextualise the micro-macro linkages of GVCs. Section 3 provides a brief description of the data and methodology employed for empirical analysis. Section 4 discusses the main findings and tests the hypotheses. Section 5 presents the theoretical and practical implications. Section 6 concludes with a proposal on how the Commonwealth could navigate a path of sustainable and resilient economic recovery post-covid.

2. Literature review

The GVC concept was introduced following the increasing fragmentation of production across countries and the specialisation of countries in ‘tasks’ and business functions, rather than

'specific products' (Gereffi, 1994). Literature refers GVCs 'to the nexus of interconnected functions and operations through which goods and services are produced, distributed, and consumed on a global basis' (Kano et al., 2020, p. 581). Every time a product crosses a national border, international transactions are recorded as the full or gross value of the product, and this leads to multiple counting (Khorana & Escaith, 2020). At the end of the value chain, the parts are assembled for final use and then either absorbed domestically as consumption and/or investment goods or exported as final goods. In the latter case, the concept of 'country of origin' or 'country of destination' does not fully apply; if the national origin of the value-added incorporated in the final product is examined, one realises that significant shares of the value may come from countries other than the country of origin as ascribed by customs records (Escaith, 2014). Thus the key attributes of GVCs are their role across the full range of activities that firms and workers do to bring a product from its conception to its end use and beyond. The nature and importance of GVCs changed following the increased fragmentation of production across countries and the specialisation of countries in 'tasks' and business functions, rather than 'specific products'.

The literature on GVCs has mushroomed, with academics commenting on GVCs from multiple interdisciplinary perspectives – from economic sociology (Gereffi et al., 2005) and economic geography (Thomsen, 2007), to development studies (Kaplinsky & Morris, 2000) and international studies lens (Palpacuer et al., 2005). Golgeci et al. (2021) highlight the importance of firms' strategies, capabilities and collaborative GVC relationships in emerging markets. Mentzer et al. (2006) provide an overview of the components of 'value chain analysis' from an international organisation perspective, which aims at identifying where opportunities for improvement exist for a firm. From an international business perspective, the analyses of GVCs have sought to foster an understanding of the global implications of individual business decisions in internationalising corporate supply chains.

The GVCs and ‘international supply are used interchangeably in the literature chains’as are micro (firm) and macro (country-level) perspectives. Yet the two concepts are slightly different and, more importantly, refer to two different domains of analysis. The international trade (macro) perspective examines the international specialisation patterns created through the convergence of business decisions aiming at outsourcing and offshoring production tasks. However, the micro and macro approaches are closely interrelated in that changes in business models and supply chain managers’ perceptions of risk and opportunities affect GVCs and sourcing decisions. Buckley et al. (2019) examine GVCs using the global factory theory (Buckley & Casson, 2009; Buckley & Ghauri, 2004) and offer complementary insights into why ‘offshoring’ and ‘outsourcing‘ challenges and opportunities occur, and how managers address them. Commenting on outsourcing and offshoring strategies for GVCs, scholars primarily focus on two key decision dimensions – control and location – as the primary determinants of these complex organisational structures. Kano et al. (2020) base their argument on the ownership, location and internalisation (OLI) theory, which integrates various theoretical perspectives to explain the functioning and governance of GVCs and to explain the extent, pattern and geographic dispersion of firms’ foreign value-adding activity. Kano et al. (2020) state that the degree of theoretical pluralism is due to the multidimensionality and the multidisciplinary nature of GVCs. Studies also employ the resource-based view (RBV), knowledge-based view and organisational learning (Corredoira & McDermott, 2014), and innovation theories (Golini & Gualandris, 2018).

This paper draws on the transaction cost economics (TCE) theory (Coase, 1937; Williamson, 1979) to examine how firms in GVCs are likely to make location and control decisions post-COVID, by drawing on how business transactions are structured in challenging decision environments (Buckley & Casson, 2009; McIvor, 2013; Mudambi & Puck, 2016; Roza et al., 2011; Schneider et al., 2013). We use the theoretical lens to examine how TCE justifies the

relocation of value-creation activities by firms' associated coordination and control costs, whereby the shift to reshoring is more likely when coordination and control costs of offshoring are beginning to escalate post-COVID (Foerstl et al., 2016). Figure 1 draws on the TCE theory to present the factors that explain how firms associated with GVCs incur costs and the influence of behavioural (bounded rationality and opportunism) and transactional factors (uncertainty and asset specificity) on GVCs (Foerstl et al., 2016; Williamson, 1975).

<Insert Figure 1 here>

Behavioural factors: these include bounded rationality and opportunism. *First*, bounded rationality highlights the insufficient cognitive and computational capacities of the human mind to process information and find ideal solutions for complex real-life problems, which leads them to seek satisfactory instead of optimal outcomes (Mallard, 2015, p. 2). This bounded rationality assumption offers key tenets to explain the seemingly irrational human decisions in a complex situation – that is, in the GVC reconfiguration landscape in times of uncertainty. Studies show that decision-makers (with bounded rationality) often find it difficult to anticipate all the expected costs and outcomes of their decisions, for example, product recall costs, reputation costs, loss of control costs, a faster-than-expected surge in Chinese labour costs, etc. (Fratocchi et al., 2014). Further, bounded rationality also leads actors (firms) in GVCs to replicate the 'bandwagon effects' on others; that is, firms follow relocation trends which may not always bring benefits to the replicating firms (Barthélemy, 2003). *Second*, opportunism implies the self-interest behaviours of actors in the transaction (Williamson, 1973). In GVCs, when a firm becomes increasingly dependent on its suppliers (Reshoring Initiative, 2015), its perceived risks – such as the risk of a price surge – increase.

Transactional factors: these consist of uncertainty and asset specificity. *First*, uncertainty can be attributed to macro-factors and the complexity of GVCs. The macro-factors, i.e. trade conflicts, COVID-19 shocks, as well as policy changes by host countries (e.g. lower tariffs),

impact the attractiveness of geographical locations and in this way present as a source of uncertainty (Gray et al., 2013; Tate, 2014). The increased complexity in GVCs, attributed to cultural and geographical dispersions, further amplifies the uncertainty for GVCs (Ellram, 2013). *Second*, asset specificity is defined as, 'the degree to which an asset can be redeployed to alternative uses by alternative users without the sacrifice of productive value' (O. E. Williamson, 1985, p. 95). Asset specificity can be broken down into three constituents, namely, physical asset specificity (level of product/service customisation), human specificity (level of knowledge customisation) and site specificity (perceived scarcity/availability of resources in a location) (De Vita et al., 2011; Foerstl et al., 2016). TCE postulates that an investment in high asset specificity should only be deployed on high expected returns on investment, because the higher asset specificity, the higher the risk of opportunistic behaviour and, subsequently, the higher the control costs that are incurred to safeguard against this risk (Heide & Stump, 1995). This suggests that in GVC reconfiguration decisions, asset specificity should be taken into account due to the significant investment costs involved in redeployment decisions for asset specificity.

Thus, TCE's behavioural and transactional factors are dynamically intertwined and influence the firms' reconfiguration decisions to participate in GVCs. It is uncertainty in conjunction with bounded rationality that drives the decision-makers to favour nearshoring and reshoring decisions (Ellram, 2013; Gray et al., 2013). Meanwhile, the level of asset specificity and corresponding opportunistic behaviour determines the scale (decoupling or nearshoring/reshoring) and entry modes (outsourcing or in-housing) of GVC reconfiguration (McIvor & Bals, 2021; Wan et al., 2019).

Building on the literature, we hypothesise that the configuration of Commonwealth GVCs may change in future, based on the following propositions:

- *Proposition 1a: Growing trade and GVCs lead to higher participation of Commonwealth countries in global trade.*
- *Proposition 1b: The economic size of Commonwealth countries determines their position in GVCs.*
- *Proposition 2: The supply and demand shocks that propagated through GVCs during the pandemic impacted Commonwealth countries' trade.*
- *Proposition 3: Geopolitical trade conflicts and the pandemic shocks are likely to impact the GVC reconfiguration of Commonwealth countries*.

3. Methodology

Methodology: The paper examines inter-industry and inter-country complementarity and dependence based on international input-output (IO) models that show the production linkages between sectors and countries. The GVC participation of a country is measured as the reliance on foreign inputs to produce its exports and the share of its domestically produced inputs used in third countries' exports. The domestic value-added is broken down into exports absorbed in the destination country and those that are used as intermediate inputs for export to third countries (forward linkages) or returned home. Based on this decomposition, the two indicators of GVC participation used in this report were: backward linkage (share of foreign value-added in total exports of a country) and forward linkage (domestic value-added embodied in exports of intermediate inputs that are re-exported to third countries), expressed as a ratio of gross exports. Post-COVID forecasts on Commonwealth trade – that is, trade prospects in volume for 2025 – were based on a demand-driven gravity model, which took the expected changes in the volume of imports from individual countries as a starting point and factored in demand variations to influence the volume of exports from trade partners. The simulations were based on the hypothesis that: (i) the pandemic did not affect the capacity of trade partners to supply

the products demanded by importing countries; and (ii) trade policies in importing and exporting countries, as well as trade costs, did not change.

Data: The paper uses the Eora Multi-Regional Input–Output (MRIO) table (Lenzen et al., 2013) to examine pre-COVID trade patterns and estimates GVC linkages for Commonwealth countries, focusing on intra-Commonwealth trade plus trade with the main G20 trade partners and the rest of the world (ROW). The Eora database covers most Commonwealth countries [1] and includes data on 26 sectors (see Annexes 1 and 2). For analytical purposes, our results have been aggregated in three sectors, namely: the primary sector (agriculture, fisheries and mining), which is typically engaged in upstream activities in the supply chain and producing commodities; secondary sector (manufacturing), which includes industries (numbered 4 to 11 in Annex 1) that process and transform these primary inputs to produce more complex intermediates or final goods; and the tertiary sector, which includes commercial and administrative services (sectors 13 to 23 in Annex 1). A fourth category ('Other sectors') includes sectors (for example, recycling, household services, re-exports and re-imports) where the data quality was weak or not relevant for trade analysis. It is important to mention that the quality of statistical coverage differs widely from one country to another, and Eora resorts to algorithmic techniques to impute missing IO data. [2]

The trade data used for trade simulations were sourced from the CEPII database. The classification of products was simplified into six categories (agriculture and food products; minerals and chemicals; textile and apparel; manufacture; articles made of basic metal; other

[1] Data on some smaller Commonwealth countries was absent. This meant that Dominica, Grenada, Kiribati, Nauru, Saint Lucia, Solomon Islands, St Kitts and Nevis, St Vincent and The Grenadines, Tonga and Tuvalu were excluded from the analysis.

[2] For many small developing countries where data are missing, Eora coefficients result from an imputation process based on standard input–output tables, Industry Technology Assumption and trade data. Hence, we aggregated individual sectoral results to reduce the incidence of measurement errors: as long as the many small measurement errors resulting from the imputation methodology are not correlated, the relative uncertainty in the aggregate is smaller than the uncertainty in the components.

products not elsewhere specified). Each category was characterised by an import-demand elasticity in line with Ghodsi et al. (2016).

4. Findings and analysis of GVCs in the Commonwealth countries

Proposition 1a: Growing trade and GVCs lead to higher participation of Commonwealth countries in global trade.

Proposition 1b: The economic size of Commonwealth countries determines their position in GVCs.

Commonwealth countries' participation in GVCs increased rapidly during 2005–15, with this characterised by higher domestic and foreign value-added in their export content. The exports of intermediate inputs also doubled, from about US$350 billion in 2005 to around $700 billion in 2018. The main reasons for higher Commonwealth countries' trade and GVC participation can be attributed to a series of factors, such as domestic policy reforms, engagement in the regional and multilateral forum, and streamlining border procedures.

First, during 2005–2015, four of the largest Commonwealth economies, namely India, Malaysia, Singapore, and South Africa, instituted wide-ranging trade facilitation reforms, including tariff reduction, implemented provisions of the World Trade Organization (WTO)'s Trade Facilitation Agreements (TFAs), and improved logistics network and connectivity. The reforms first, allowed swift clearance at the borders; and second, led to higher trade in intermediary inputs, making these countries regional GVC hubs. The smaller developing Commonwealth members, with narrow manufacturing bases, also benefited from aid-for-trade and TFA, in that these countries were able to specialise in tasks and sectors instead of the entire production process. For instance, Asian countries specialised largely in electronics and machinery parts, while African members engaged largely in food processing.

Second, Commonwealth countries attracted inward foreign direct investment (FDI), with the share of horizontal FDI increasing from under US$4 trillion in 2005 to $8 trillion in 2015 (Commonwealth Secretariat, 2021). Around two-thirds of inward FDI were in productive sectors that further increased these countries' participation in GVCs.

Finally, countries such as India, Singapore, Malaysia and the UK emerged as leading exporters of services. The UK was a leading provider of financial services, while Singapore specialised in transportation services and India in ICT services; these further facilitated Commonwealth countries' participation in GVCs.

Figure 2 corroborates increased GVC participation in trade, through the GVC participation index, between 1995 and 2015. Detailed country analysis suggests that Commonwealth countries in Asia, Europe and the Pacific present a large increase in the average GVC indices (2.5, 1.9 and 1.2, respectively). The relative intensification is higher for Asia, especially Malaysia (+6.2) and Singapore, which is driven by closer integration between Commonwealth economies.

<Insert Figure 2 here>

The Commonwealth countries in Africa also stand out (panel b, Figure 2) due to strong intra-industrial trade in countries such as Lesotho, Botswana or Tanzania with South Africa, which are important regional hubs in Africa. In the Pacific, the GVC participation index for Australia and New Zealand increased, due to the rise of China as a regional GVC hub. For the UK, Malta and Cyprus, the relative changes were smaller since these countries were already integrated into GVCs.

The influence of structural factors, which include connectivity, geography and economic size, on GVC participation is well established in the literature. Empirical evidence reveals that trade policy and FDI are significant factors for firms' progression in GVCs, while openness to FDI

is positively linked to backward GVC participation (Ana M Fernandes et al., 2020; Kee & Tang, 2015). Similarly, trade regulatory barriers, such as tariffs on final goods and intermediate products, are important determinants of trade performance at the macro-level and are negatively associated with GVC participation (Bas & Strauss-Kahn, 2015; Ana M. Fernandes et al., 2019; Pierola et al., 2018). In terms of connectivity, studies suggest that logistics performance influences trade in intermediate products more than in final goods (Ansón et al., 2020). This finding is consistent with the 'just-in-time' management model adopted by most GVCs. In terms of geography, there is a strong positive correlation between bilateral GVC links and geographical distance and distance to manufacturing hubs, for example, China, Germany and the USA (Buelens & Tirpák, 2017; Kowalski et al., 2015). Last, studies also establish a relationship between economic size, forward and backward GVC participation (Kee, 2015). Studies examining the 'Commonwealth effect' (Bennett et al., 2010; Khorana & Martínez-Zarzoso, 2019; Shingal & Razzaque, 2015) confirm that Commonwealth countries' participation in GVCs increased during 1995 to 2015 and intra-Commonwealth trade in goods expanded.

Proposition 2: The supply and demand shocks that propagated through GVCs during the pandemic impacted Commonwealth countries' trade.

Our analysis shows that the COVID-19 pandemic constrained economic growth in all countries, including the Commonwealth, and adversely affected demand (Figure 3). Results show that besides China, where GDP expanded by 2.3 per cent, the major destinations for Commonwealth exports recorded a significant contraction of GDP in 2020. In India and Singapore, GDP declined by more than 5 per cent. In the USA, which absorbs 31 per cent of developed Commonwealth members' goods and services exports and 12 per cent of those from developing members, GDP contracted by 3.5 per cent. The European Union, which collectively represents the second-largest market for Commonwealth exports, contracted by 6.6 per cent.

Within the EU-27, growth in the three top destinations for Commonwealth exports – Germany, France and the Netherlands – declined by 4.9 , 8.2 and 3.7 per cent, respectively. Similarly, the UK's GDP, a key destination for intra-Commonwealth exports, dropped by around 9.9 per cent. These markets collectively absorb around 75 per cent of Commonwealth developed members' exports and around half those of developing countries. The results show that all Commonwealth members were likely to exhibit negative or marginal real growth in 2020, but the impact varies. At the time of writing, most of these economies were still subject to various virus-containment measures.

<Insert Figure 3 here>

Table 1 presents the intensity of the impact of COVID-19 across sectors for all Commonwealth countries as of 2020. The intensity of the impact varied, driven by a combination of supply and demand shocks generated domestically or in other countries and was transmitted across different sectors. For instance, while sectors such as Education and Administration were not hit as hard – mainly due to the fact that workers could work from home – retail, hotels and restaurants were severely impacted, due to reliance on the interactive mode of delivery as well as demand from foreign tourists.

<Insert Table 1 here>

In line with TCE theory, the demand and supply shocks induced by the COVID-19 pandemic escalated the uncertainty factor, which is a major driver for GVC reconfiguration, i.e. reshoring and inshoring investment decisions. The uncertainties, characterised by simultaneous shocks in supply and demand along the value chain, led to unpredictable scaling and ripple effects across sectors. The impact of COVID-19 uncertainty on GVCs has been established by a number of prominent scholars (Baldwin & Freeman, 2020; Baldwin & Tomiura, 2020; Javorcik, 2020; Miroudot, 2020). Some studies have gone further to suggest that the COVID-19 pandemic impacted highly integrated economies more severely than those that were less

integrated into GVCs (Eppinger et al., 2020; Meier & Pinto, 2020; Sforza & Steininger, 2020). Since COVID-19 is ongoing and in light of the conflict in Ukraine, uncertainty is rising – which has further disrupted global GVCs and Commonwealth trade.

Proposition 3: Geopolitical trade conflicts and the pandemic shocks are likely to impact the GVC reconfiguration of Commonwealth countries.

Table 2 provides an example of the indirect effects of China–USA bilateral trade embargoes on four large Commonwealth exporters. The medium-term effects are based on the assumption that the Commonwealth exporters are capable of filling the gaps left by the embargoed suppliers. The table is mainly illustrative of the difference existing between upstream and downstream industries in GVC trade, and the complexity of assessing the net impact of trade conflicts on global value chains. In the case of China prohibiting the import of US vehicles, the UK would benefit from increased export opportunities to China. On the contrary, Australia, Canada and India, which are providers of intermediate inputs to US firms, would suffer a net loss in total exports. Similarly, Canada, which supplies inputs to the US agricultural sector, will end up losing if China stops importing these US products, even if its exports to China increase, as in the case of Australia or India.

<Insert Table 2 here>

This example was relatively simple, limited to shocks affecting just one single product at a time. Even if the monetary value of the losses and gains for third countries are important, they remain small in a proportion of their total trade. A more widespread conflict affecting a wider range of merchandise and industries would have far-reaching implications, including for other countries. More important for the possible implications on third countries is the distinction between a pure trade dispute, as in our example, and a geopolitical confrontation between two superpowers. In this case, third countries may not be able to remain neutral bystanders and

would have to choose a side. And, in matters of international trade, it is not possible to differentiate between nations and firms: what affects the global governance of trade at the political level has important implications for businesses. In the presence of systemic uncertainty, the 'just-in-case' option dominates over the 'just in time'. Firms concentrate on the worst case as they cannot rule out the possibility of supply disruptions. Meanwhile, from China's perspective, the Belt and Road Initiative is aimed at creating its own economic backyard. The consulting firm Kearney (2021), in its recent reshoring report, expects that many US companies will consider a 'China plus' strategy in an attempt to decrease their reliance on China while maintaining a foothold in the Chinese market. This suggests that decoupling will only be partial but offers opportunities for Commonwealth firms should they be able to fill the gap. Labour-abundant countries in the Indo-Pacific region are obvious candidates going by recent trends (see Figure 2). Further, firms in Africa and the Caribbean have also a role to play in the reconfiguration of GVC trade away from 'Factory China'.

This preposition is strongly supported by the theoretical arguments of TCE. The TCE theory, with uncertainty and bounded rationality factors, argues that when trade conflicts and the COVID-19 pandemic are still ongoing, the presence of systemic risks is pronounced and the macroeconomic uncertainty remains; hence, the decision-makers with bounded rationality may not be able to gather all necessary information to address the complexities of all eventualities. Instead, they may base their decisions on the heuristics process or the imitation of other actors' actions in the field ('the bandwagon effect') to pursue satisfactory rather than optimal choices. In this sense, the choice of finding alternative production and supply bases can alleviate the COVID-19-related uncertainty, avoid geopolitical risks and enhance economic resilience, while maintaining a desirable efficiency level. Such choices often come from high perceived 'familiar' areas that coincide with existing locations, fall in the same customs union or geographical proximity, or share similar institutional and political systems as well as

geopolitical interests. It is important to note that geographic proximity is often heuristically favoured for shortening the supply chain and reducing the complexity level and associated uncertainty for decision-makers with bounded rationality. Though this will not translate into a radical deglobalisation scenario, a GVC reconfiguration in favour of regionalisation that weakens current momentum is highly likely.

Due to the long lead time to reconfigure the supply chains, it is not possible to reveal the extent to which the COVID pandemic and trade war have triggered the operationalisation of nearshoring, decoupling and reshoring (P. Williamson, 2021). The trend of the GVC reconfiguration is largely espoused in recent literature (Enderwick & Buckley, 2020; Gereffi, 2020; Pla-Barber et al., 2021; Zhan, 2021) and survey-based studies (Allianz Research, 2020; McKinsey, 2020). The survey by Allianz Research (2020), of 1,181 companies in various sectors, revealed that 9 per cent of companies experienced COVID-19-related disruption and roughly 45 per cent considered reshoring and nearshoring to countries with the same customs union or free trade agreement (FTA) to improve quality, profit margins and to reduce delays. Similarly, McKinsey's survey (2020) of 60 senior supply chain executives indicated the influences of the COVID-19 on supply chain transformations, with more than 90 per cent of the respondents planning to enhance resilience using different mechanisms including dual-sourcing, nearshoring and regionalisation.

We argue that TCE, with asset specificity and opportunism factors, offers an explanation for the dissimilar intensity and extent of GVC reconfiguration in different sectors. The sectors such as textiles, which are characterised by high standardisation, low asset specificity and insignificant technological and infrastructural investments, show a stronger tendency toward frequent non-equity GVC reconfiguration (or outsourcing) to low-cost alternative regions. This is because of low perceived opportunistic behaviours of suppliers and low control and switching costs. Meanwhile, cost-efficiency remains the driving force in the search for new

suppliers. This is backed by the findings in some studies, for example, in Pla-Barber et al. (2021), McIvor and Bals (2021) and Wan et al. (2019). The sectors such as automotive or electronics stand in contrast, as these are characterised by high physical and human asset specificity and show a stronger tendency toward equity GVC via decoupling and reshoring to tighten control, reduce risks and improve quality. Specialised asset specificity often requires significant investments to redeploy resources and substantial control costs to lower opportunistic behaviours of suppliers. Hence, it is not easy to make a swift and frequent relocation decision in these sectors. Decoupling or splitting GVCs into the final market destination to limit impacts induced by COVID-19 and the trade war is one of the satisfactory options in this case (McIvor and Bals 2021). Reshoring to produce processes in-house is another option to avoid the high opportunistic behaviour costs of using local suppliers (ibid.). The advancement of novel decentralised manufacturing technology, for example, 3D printing or robotics, which contributes to lowering labour and control costs and increasing the speed of response to highly customised orders, reinforces the reshoring trend in these high asset specificity sectors (Ancarani et al., 2019; Strange & Zucchella, 2017). Finally, sectors such as mining, agriculture and energy, which are characterised by high site-specificity, are less likely to be influenced by the regionalisation trend due to location-bound resources (Narula, 2018). However, national policies regarding e.g. self-sufficiency ratio in the food and medical sectors or national security in the energy sector, play a pivotal role in GVC reconfiguration (McKinsey, 2020).

5. Theoretical and practical implications

Theoretical implications: First, our analysis highlights the complexity of interactions between global producers and emphasises the concept of a Commonwealth network of supply chains using the TCE theory framework to elaborate on the macro–micro linkages. This is the first attempt to do this in literature. This paper conceptualises, as Hudson (2004) mentions, 'economic processes in terms of a complex circuitry with a multiplicity of linkages and

feedback loops' but examines it from an international business and organisational perspective. While discussions on disentangling the domestic and foreign content of Commonwealth countries' trade, as well as identifying the backward and forward linkages for primary and secondary goods, are key, an examination of how geopolitical reordering of the international system post-COVID and trade wars are likely to influence GVCs is yet another novel contribution.

Second, the paper unpacks the geographical dimensions of Commonwealth trade with IO analysis and highlights the role of firms and business decisions in structuring GVC trade, in line with the new 'New' trade theory. Our empirical contribution to the literature suggests that for GVC estimations, first, country-level IO analysis should be employed to empirically identify how products are transformed from raw materials into final products. Second, the geographical coverage of the relevant GVC should be considered. Third, the governance mechanisms underpinning GVCs must be analysed, with a focus on how the value chain is controlled in an industry or sector. Fourth, the institutional context in which the industry value chain is embedded in Commonwealth countries is relevant.

Finally, the available evidence suggests limited reshoring, which could be attributed to automation and additive manufacturing or be a result of quality issues and proximity to markets. A decisive factor for future reshoring will be linked to geopolitical developments; however, nearshoring is more likely though this will depend on regulations.

Practical implications: COVID-19 has highlighted both the strengths and weaknesses of GVCs. Experience suggests that international production networks can be disrupted and play a role in the propagation of economic shocks across countries and industries. The direct supply shocks are attributed to domestic manufacturing sectors in less-affected nations finding it expensive to acquire the necessary imported inputs from the harder hit nations. The demand shocks are attributed to a decrease in the aggregate demand (recession) and precautionary or

wait-and-see purchase delays (delayed purchases and investments). The countries most adversely affected have suffered the adverse effects of the pandemic. The widespread international mobility that contributed to the spread of COVID-19 globally, the greater defragmentation of production chains, and management principles (just-in-time and lean production with low stockpiles of inputs) increased the susceptibility of the global economy to the shock and speed of the contagion. The impact has been, however, asymmetric due to the nature of the individual (sector-level) value-added chains. This has a direct influence on individual firms' sourcing strategies, which may differ across activities depending on the level of acceptable risk, with supplier diversification and 'just-in-case' processes an objective for essential activities. Furthermore, trade wars might lead to unbundling and duplication of strategic supply chains and could fuel greater regionalisation of value chains.

The COVID-19 pandemic has created supply chain disruptions and revealed the fragility of globalised inter-industry arrangements. The political movement against globalisation can be traced back to the 2008–09 financial crisis, while the subsequent rise in unemployment ultimately led to the trade conflict between China and the USA in 2018. This conflict can be traced back to 2015 when China declared that the objective of 'Made in China 2025' was to gain domestic autonomy and world leadership in key value chains. The COVID-19 crisis has put the risks in perspective and, in September 2020, the US administration declared that it, 'will end reliance on China' through 'decoupling'. In February 2019, the European Union (EU) announced that steel imports would be subject to quotas to counter the concerns of trade deflection and fears that Europe could be flooded with steel no longer being imported into the US. The trend accelerated due to the COVID-19 crisis and issues in securing critical inputs through foreign suppliers. In 2020, the EU published a paper on industrial strategy, which is seen as a step toward reducing the bloc's reliance on the outside world. Ursula von der Leyen,

EU Commission President, has called for Europe to have ‘mastery and ownership of key technology’.

The UK’s departure from the EU has disrupted several GVC linkages and increased trade costs. The ‘Global Britain’ strategy aims to increase the country’s freedom to conduct economic diplomacy and respond to the changing world order, which is likely to further impact GVCs. In March 2021, the publication of the ‘Global Britain in a Competitive Age under the Integrated Review of Security, Defence, Development and Foreign Policy’ policy paper signalled a policy change towards building a stronger trade relationship with the Commonwealth countries in the Indo-Pacific region (UK Governemnt, 2021). The Global Britain policy suggests that international trade and the cost/benefit balance are being assessed from the perspective of national geopolitical strategy, thereby departing from the pre-COVID-19 focus on assessing benefits in terms of welfare, economic growth and job creation. The new emphasis on nationalistic industrial policies is also evident elsewhere in the Commonwealth, with India, for instance, promoting a ‘self-reliant’ economy. Thus, the trend of reshoring – that is, capturing the international segments of GVCs – does not portend a bright future for developing new Commonwealth GVCs, as there is a growing trend toward regionalisation of value chains.

Our results show that GVCs will most probably become more regional and centred around existing global hubs: China, Europe and North America. Despite bilateral tensions, Europe and North America are expected to co-operate and present a common front against China. The whole ‘decoupling’ agenda lies in finding ways for European and American firms to become less dependent on China. Managers of these firms may not be particularly enthusiastic about decoupling, which suggests that large multinational corporations (MNCs) could split GVCs and specialise according to final destination markets.

From a business management perspective, the challenge is to move from a ‘just-in-time’ lean production model to a more resilient ‘just-in-case’ supply chain organisation. This does not

obligate large inventories of strategic inputs, but rather involves diversifying procurement sources. Diversification entails, in most cases, losing economies of scale and accepting to pay higher prices because the logic of concentrating GVCs within a few first-tier partners was to negotiate low unit prices in exchange for high volumes. The just-in-case strategy prioritises resilience over the cost and cash flow optimisation benefits associated with just-in-time models. Nearshoring and reshoring emphasise shorter economic circuits – a trend that is in line with the increasing importance given to environmental and social concerns. The challenge is to achieve this without losing international competitiveness.

From the perspective of the governments of large economies, strengthening the domestic value chain is key (by reshoring outsourced segments or capturing more value-added domestically). The second best option is to induce nearshoring and the relocation of providers located in 'unfriendly' countries to 'friendly' trade partners and, if possible, within the sphere of geopolitical influence. The objective of smaller economies is to keep options open without annoying the superpowers. From the micro (firms) and macro (country-level) perspectives, multilateralism is receding and blocks are resurging to devise an 'us and them' configuration. The move to decoupling (driven by geopolitical concerns) and risk mitigation (supply chain management considerations) presents opportunities for the Commonwealth.

Rising GVC trade costs must be interpreted in light of uncertainties arising from geopolitical tensions, which have revealed the fragility of complex international GVC arrangements. The concept of nearshoring should not be understood as locating supply chain activities in countries that are 'near' from a purely geographical perspective, but rather relocating to countries where the environment is considered to pose a low risk. Nearshoring for European firms has a clear geographical dimension. But trade costs – that is, transportation plus custom duties and other fees – must be taken into account in post-COVID times. When GVC trade is by nature long term and involves a mutual commitment to production processes, quality control and corporate

social responsibility, international outsourcing could take the form of offshoring: this will make a deeper arrangement. Risks, in particular, are the main consideration. China's rise as the global factory after joining the WTO in 2001 was interpreted as a guarantee for market access not only for foreign products in China but also for products manufactured in China and (re)exported to other countries. The WTO was expected to provide an additional layer of global governance, by prohibiting differential treatment between local and foreign firms and offering a mechanism for the resolution of differences. This layer has been considerably weakened over the years and GVC trade has become riskier. Therefore, risk mitigation and GVC resilience are even more important today when reshaping international supply chains.

6. Conclusion and policy perspectives

Using the TCE framework, the paper has observed how all Commonwealth members have been impacted by the pandemic, fleshing out the macro-micro linkages that are relevant for businesses and policy-making. The participation of Commonwealth countries in GVCs increased between 1995 and 2015, mainly as a result of policy measures and TFAs. We have also shown that Commonwealth countries' increased participation can be attributed to their economic size and that this determines the role of countries in GVCs. We have discussed how the supply and demand shocks that propagated through GVCs during the pandemic impacted Commonwealth countries' trade, and that the intensity of the impact of the pandemic varied across sectors for Commonwealth countries, with some sectors being hit harder than others. Finally, we examined using the TCE theory whether trade conflicts have the potential to impact the GVC configuration of Commonwealth countries following the outbreak of COVID-19 if the perception of governments and citizens towards globalisation has changed and whether the general mood is skewed toward economic nationalism. Using the TCE theory, we have argued that since systemic risks and uncertainties are important components in GVC trade, the search for resilient international supply chain arrangements is likely to favour European and North

American nearshoring towards countries perceived as being 'closer' in terms of distance, common institutional and political systems, and geopolitical interests. Relocating components or parts of the GVC to Commonwealth countries may reduce risks effectively and enable European and North American lead firms to engineer diversification strategies.

More resilient production networks can be achieved through better risk management strategies at the firm level, putting the emphasis on risk awareness, greater transparency in the value chain and promoting agility. Firms' sourcing strategies may differ across activities, depending on the level of acceptable risk, with supplier diversification and 'just-in-case' processes an objective for essential activities. Commonwealth policy-makers can support firms in building resilient GVCs by collecting and sharing information on potential concentration and bottlenecks upstream. Policy-makers can also support developing stress tests for supply chains and create a conducive regulatory environment that addresses the current policy-related uncertainty for firms. However, policy-makers' decision to devise strategies to protect their economies with specifically targeted policies to support domestic value chains and GVCs, while facilitating transformation to cope, remains challenging in the current environment.

At the same time, the slowdown in economic activity due to COVID-19 could be an opportunity for policy-makers to adopt a more strategic approach to GVC participation, by focusing on ecological resilience and harnessing a sustainable circular economy. A transition is challenging for some Commonwealth developing countries, especially those that confront structural obstacles such as low savings rates and high poverty levels. From the policy perspective, strengthening the domestic productive base with an emphasis on social and sustainability criteria should be a key component to promote the integration of Commonwealth countries into GVCs. This can help them to trade with countries in Europe and North America, where corporate social responsibility is increasingly seen as a necessary condition to align with consumers' preferences.

To conclude, developing a sustainable domestic economy and providing conducive business and trade environments that do not inflame the debate on reshoring driven by protectionist sentiments are expected to be important drivers of business in the post-COVID world.

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Tables and Figures

Figure 1. Applying the TCE theory to GVC farmework

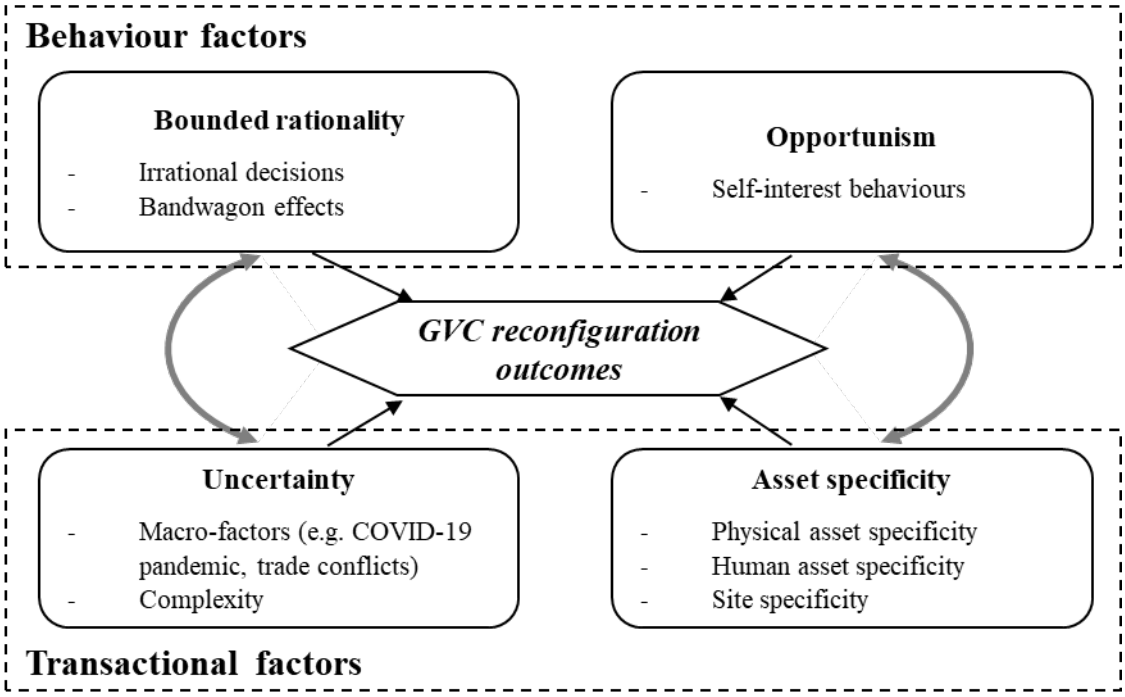
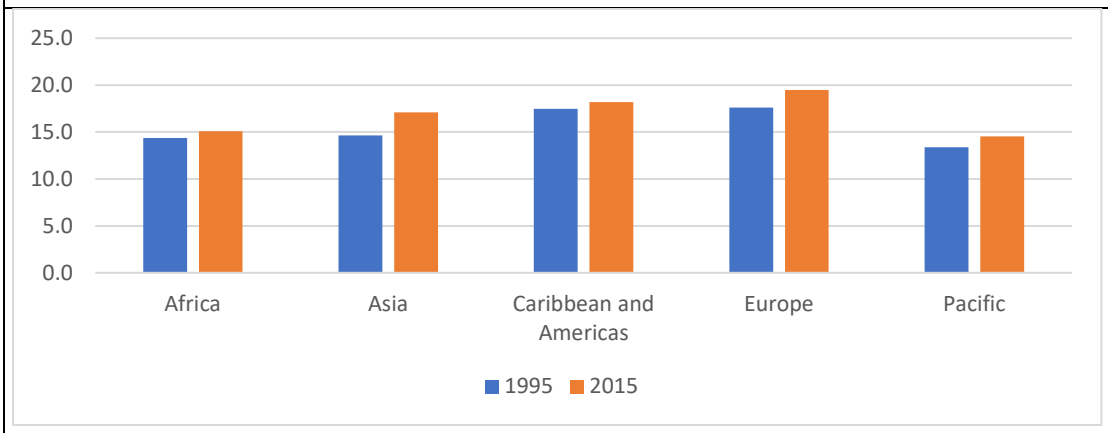
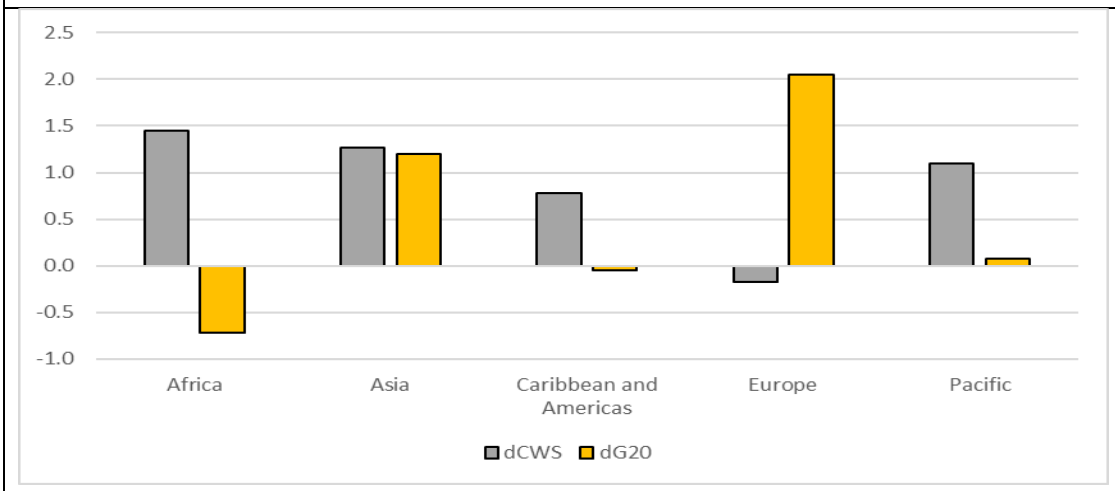


Figure 2. Participation index of Commonwealth countries in GVCs, 1995–2015

a. Percentage of exports, average of forward and backward linkages



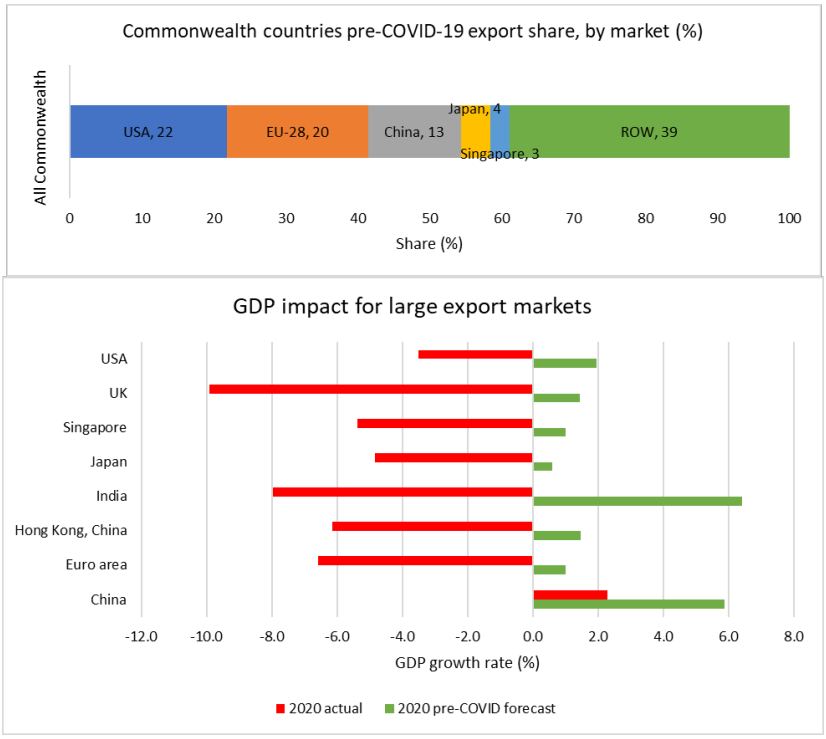
b. Differentiation between intra- and extra-Commonwealth sources of variation



Note: The GVC index is the share of value-added of imported inputs in exports, plus the share of domestic value added exported as intermediate inputs, divided by 2. Regional indices are the simple average of country indices. Zambia was excluded from the regional average due to the presence of outlier intermediate results due to missing data.

Source: Authors, based on EORA data

Figure 2. Commonwealth market share and GDP decline in large export markets (%)



Source: Authors' calculations using UNCTADstat and WTO-OECD BaTIS datasets, and data from the IMF and World Bank Outlook.

Table 1. Intensity of COVID-19 impact on economic activity, by industry

Industry	*Intensity of impact*	*Industry*	*Intensity of impact*
Public Administration	Low	Electrical and Machinery	High
Education, Health and Other Services	Low	Hotels and Restaurants	High
Electricity, Gas and Water	Low	Maintenance and Repair	High
Private Households	Low	Metal Products	High
Agriculture	Low-Medium	Other Manufacturing	High
Fishing	Low-Medium	Petroleum, Chemical and Non-Metallic Mineral Products	High
Construction	Medium	Recycling	High
Financial Intermediation and Business Activities	Medium	Re-export and Re-import	High
Food and Beverages	Medium	Retail Trade	High
Mining and Quarrying	Medium	Textiles and Wearing Apparel	High
Others services	Medium-High	Transport Equipment	High
Post and Telecommunications	Medium-High	Wholesale Trade	
Transport	Medium-High	Wood and Paper	

Source: Authors' calculations with data adapted from ILO (2020)

Table 2. Export gains/losses due to bilateral trade shock, initial situation =100 (selected countries and products)

Medium / long term effects	USA block imports of China		China blocks imports of US	
	Medium	**Long**	**Medium**	**Long**
	Manufacture of basic metals		**Crop and animal products**	
Australia	100.9	100.2	100.7	100.7
Canada	101.6	101.6	99.7	99.0
United Kingdom	101.1	100.9	100.0	99.9
India	102.2	102.1	100.6	100.5
	Computer, electronic and optical products		**Motor vehicles**	
Australia	122.2	122.0	99.9	99.8
Canada	127.3	127.3	85.2	85.1
United Kingdom	123.3	123.1	101.3	101.3
India	116.4	116.1	98.0	98.0

Note: Simulation for illustrative purpose only. The long-term effects suppose that 50% of the trade deviation is redeployed to other countries, competing against established domestic and foreign suppliers.
Source: Authors, based on Escaith et al. (2020) and WIOD database (2016).

Annex 1 Sector classification in Eora

1	Agriculture	13	Electricity, Gas and Water

2 Fishing	14 Construction
3 Mining and Quarrying	15 Maintenance and Repair
4 Food and Beverages	16 Wholesale Trade
5 Textiles and Wearing Apparel	17 Retail Trade
6 Wood and Paper	18 Hotels and Restaurants
7 Petroleum, Chemical and Non-Metallic Mineral Products	19 Transport
	20 Post and Telecommunications
8 Metal Products	21 Financial Intermediation and Business Activities
9 Electrical and Machinery	
10 Transport Equipment	22 Public Administration
11 Other Manufacturing	23 Education, Health and Other Services
12 Recycling*	24 Private Households*
	25 Others*
	26 Re-export and Re-import*

Note *: Not included in the analyse

Annex 2: List of Commonwealth countries

Included in EORA		Not included	
Country	**Region**	**Country**	**Region**
Antigua and Barbuda	Caribbean and Americas	Dominica	Caribbean and Americas
Australia	Pacific	Grenada	Caribbean and Americas
Bahamas, The	Caribbean and Americas	Kiribati	Pacific
Bangladesh	Asia	Nauru	Pacific
Barbados	Caribbean and Americas	Saint Lucia	Caribbean and Americas
Belize	Caribbean and Americas	Solomon Islands	Pacific
Botswana	Africa	St Kitts and Nevis	Caribbean and Americas
Brunei Darussalam	Asia	St Vincent and The Grenadines	Caribbean and Americas
Cameroon	Africa	Tonga	Pacific
Canada	Caribbean and Americas	Tuvalu	Pacific
Cyprus	Europe		
Fiji	Pacific		
Gambia, The	Africa		
Ghana	Africa		
Guyana	Caribbean and Americas		
India	Asia		
Jamaica	Caribbean and Americas		
Kenya	Africa		
Kingdom of eSwatini	Africa		
Lesotho	Africa		
Malawi	Africa		

Malaysia	Asia
Malta	Europe
Mauritius	Africa
Mozambique	Africa
Namibia	Africa
New Zealand	Pacific
Nigeria	Africa
Pakistan	Asia
Papua New Guinea	Pacific
Rwanda	Africa
Samoa	Pacific
Seychelles	Africa
Sierra Leone	Africa
Singapore	Asia
South Africa	Africa
Sri Lanka	Asia
Trinidad and Tobago	Caribbean and Americas
Uganda	Africa
United Kingdom	Europe
United Republic of Tanzania	Africa
Vanuatu	Pacific
Zambia	Africa