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The Commonwealth's Trade Landscape in a Post-COVID World

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Abstract

International trade has lifted billions of people out of poverty. It fuels economic growth by increasing employment, production and the provision of a wider variety of goods and services at lower prices. However, two unprecedented recent crises are significantly affecting global trade: the US–China trade war and the COVID-19 pandemic. Using the latest available trade data of Commonwealth countries, and empirical and regression analyses, this paper assesses: (1) the impact of the US–China trade war on Commonwealth members' trade; (2) the effect of the trade war on Commonwealth members' supply chain trade; and (3) the impact of the COVID-19 pandemic on Commonwealth members' trade.

Our results show that the US–China trade war has led to trade diversion in favour of some Commonwealth countries. Second, our supply chain empirical and regression analyses show that the trade war has led to higher Commonwealth parts and components exports to the US. Third, we found that global supply chain trade is being significantly disrupted by the ongoing COVID-19 health and economic crisis. Commonwealth countries also conducted several trade policy interventions after the start of the COVID-19 epidemic. Because of that, there has been a sharp decline in the export and import of COVID-19 related medical supplies for Commonwealth member countries. Within the Commonwealth member countries, India and UK have applied the largest number of import and export policy interventions.

JEL Classifications: F10, F63, H12

Keywords: US-China trade war, COVID-19, supply chains, trade policy

Contents

Abbreviations and Acronyms

COVID	coronavirus disease
EUI	European University Institute
GDP	gross domestic product
GFC	global financial crisis
GVCs	global value chains
HS	harmonised system
ITC	International Trade Centre
P&C	parts and components
UNCTAD	United Nations Conference on Trade and Development
UK	United Kingdom
US	United States of America
WCO	World Customs Organization
WTO	World Trade Organization

Executive summary

World trade is experiencing a staggering downturn amidst the US-China trade conflict and the spread of the COVID-19 pandemic. This paper explores the linkages between Commonwealth member countries' trade, the US-China trade war, and the COVID-19 pandemic outbreak. Given the considerable impact of the trade conflict and the COVID-19 disease on supply chain trade, the report also investigates the impact of the two negative shocks on the scale and scope of parts and components trade in relation to Commonwealth countries.

The analysis is developed in three separate sections. In section one, we explore the impacts of the US-China trade war on Commonwealth countries exports, divided into separate phases in terms of which tariffs were imposed. We find that the unresolved US-China trade war has substantial effects on Commonwealth countries' international trade flows. In general, the empirical analysis reveals the following principal findings:

- Time series plots show that Commonwealth exports to the US of products subjected to new US tariffs imposed since March 2018 have grown slightly more than their exports of non-tariffed products after the onset of the US-China trade war. This may imply trade diversion from the relatively expensive tariffed Chinese products to the relatively cheaper Commonwealth products exported to the US. Furthermore, after controlling for seasonal patterns, the average quarterly export growth for tariffed products is considerably higher than after the commencement of the trade conflict suggesting a potential role of the trade war in encouraging the export of Commonwealth products to the US market.
- Considering the evolution of non-tariffed, phase 1, phase 2 and phase 3 tariffed products separately, we find that exports of phase 2 Commonwealth products significantly increased after the start of the US-China trade war. While trade diversion is partly the cause, a favourable economic environment in the US during this period might have also played role in driving the observed export spike.
- Comparing the average export growth of tariffed and non-tariffed Commonwealth products before and after the trade war for 20 sectors, overall average Commonwealth exports of non-tariffed products significantly declined before the onset of the trade war. In particular, vegetables, prepared foodstuffs, and plastics registered the largest decline in the 2016Q2–2018Q2 period. Conversely, while the export growth of tariffed products was somewhat lower, it remained positive for several sectors after the trade war.
- Among the Commonwealth countries, Asian members' exports picked up slightly after the US–China trade war while developed Commonwealth member countries' exports to the US remained stable. African and Pacific member countries registered the most erratic export performance in the period. The developed Commonwealth members also provided the largest quantity of exports to the US, followed by Asia, Africa, the Caribbean and the Pacific member regions. Furthermore, the Asian exports of phase 1 tariffed products were relatively higher after the trade war than Africa, Pacific and Caribbean members. These results imply that developed and Asian Commonwealth members might be the major potential beneficiaries of trade diversion from China to third countries.
- If higher US tariffs discourage China's export to the US, the export of those relatively competitive Chinese products to Commonwealth members could surge — which is called trade deflection. Our empirical analysis indicates that the exports of US tariffed Chinese products to the Commonwealth region did increase. However, this export change may not be related to trade deflection as Chinese exports of non-tariffed products to Commonwealth members also increased in the same period. More specifically, with the exception of sector XII (that includes footwear, headgear,

and umbrellas), Commonwealth imports from China increased in all other sectors.

- We also formally examined the effects of the US-China trade war on Commonwealth exports to the US using regression analysis. Our estimated results demonstrate that Phase 1, phase 2 and phase 3 US tariffs on imports from China resulted in a large and statistically significant trade diversion to Commonwealth countries. Interestingly, the trade diversion effect, which is in favour of Commonwealth countries, increased over time, except a relatively modest decline in 2019. Furthermore, with the exception of 2020, the US tariff increase on Chinese products had a positive overall effect on Commonwealth exports to the US. Observing the impact of the trade war on each Commonwealth member region, while significant trade diversion benefits were registered in the developed, African and Asia Commonwealth member states, the overall impact is statistically insignificant for Asian members. The regression analysis indicates that Caribbean and Pacific members have not benefited from trade diversion.

Section two explores the disruptive impact of the US-China trade conflict on the participation of Commonwealth countries in global value chains (GVC). To understand the GVC integration of the Commonwealth region before and after the trade war, the paper used parts and components trade data. Parts and components include high-tech intermediate goods (such as pharmaceuticals and chemicals, computers, electronic and electrical equipment, machinery, motor vehicles, and other transport equipment) and the import and export of these goods before and after the shock gives some insight about evolution of supply chain trade and integration of Commonwealth members into GVCs. The descriptive analyses show that the export of Commonwealth countries was around $60-70 billion in every quarter and it was significantly increasing, suggesting the growing integration of Commonwealth countries into global supply chain trade. Region wise, Asian members' exports have shown a marked increase following the trade war, implying the strong integration of the region into GVCs.

Our regression analysis also reveals that while the trade war led to trade diversion in 2018 and 2019, it did not result in trade diversion in the first quarter of 2020. Hence, the trade war has no significant trade diversion impact on GVCs after the signing of the phase one trade agreement between the US and China. The regression analysis also demonstrates the overall insignificant impact of the trade war on Commonwealth supply chain trade.

The third section investigates the impact of the COVID-19 outbreak on the supply chain trade of Commonwealth countries. Akin to the trade war, the Commonwealth global supply chain trade is also significantly disrupted by the ongoing and unprecedented COVID-19 crisis. Descriptive analysis reveals that the Commonwealth exports of Chapter 85 (Electrical machinery and equipment and parts thereof) and Chapter 88 (Aircraft, spacecraft, and parts thereof) products to the US have considerably declined in the first quarter of 2020. The regression estimates also show that relative to pre-COVID periods, global exports of Commonwealth countries declined by 159 per cent. However, this may be due to missing recent data for many Commonwealth member countries. The regression result for Canada, Mauritius, Mozambique, New Zealand, South Africa, and the UK, for which complete recent parts and components data is available, shows that COVID-19 sharply reduced their parts and components exports by around 75%.

Finally, we analysed Commonwealth countries trade policy interventions following the COVID-19 epidemic outbreak. There was a sharp decline in Commonwealth exports of Covid-19 related products to the world and Commonwealth members' imports from China after January 2020. Among the 54 Commonwealth member countries, India and the UK have applied the largest number of import and export policy interventions after COVID-19. For example, India has applied 25 interventions in COVID-19 medical equipment and the UK has implemented 12 interventions in medicine or COVID-19 related drugs.

1. Introduction

International trade is an engine of economic growth that has helped many countries to lift billions of people out of poverty. But international trade flows have been facing various headwinds since the global financial crisis (GFC) of 2008–09. While flows recovered soon after the GFC, growth rates have never reached pre-crisis levels. The recent COVID-19 pandemic has led to another big decline in trade flows, owing to disruption of supply chains as well as changes in demand and supply dynamics. The World Trade Organization (WTO) estimates a precipitous drop between 13 per cent (best case) and 32 per cent (worst case) in merchandise trade flows in 2020 (WTO 2020). The shape and pace of recovery is still uncertain, given the uncertainties surrounding the containment of the spread of the virus and development of vaccines and treatments.

International trade will have a large role to play in the post-crisis recovery and resilience-building phase. However, keeping trade policy innovations during the COVID-19 outbreak in view, it seems that trade flows will be highly challenged in the post-COVID world. As the virus comes under control, three major areas of the debate around international trade are emerging: (i) localisation of global value chains (GVCs) and trade-offs between efficiency and resilience; (ii) re-emergence of protectionism under the disguise of health emergencies and deteriorating relations between the world's two largest economies, the United States of America (US) and China, which recently fought a trade war; and (iii) shifts in the economic drivers of trade flows, such as the fourth industrial revolution, 3D printing and other technologies.

Accordingly, the Commonwealth Secretariat commissioned this report to reflect on key drivers of change in the global trading system, and how they impact on Commonwealth members' trade.

There are two main challenges with the brief. First, the scope is vast, relative to the resources available and the timeframe in which we were required to deliver the report. Specifically, it aspires to cover three major topics, each of which requires extensive data analysis work. This was hard to achieve within the limited timeframe. Second, there are hard data constraints that shape what is possible to analyse, and what is not. For example, complete data for parts and components exports were available for only 31 Commonwealth member countries. Export of parts and components data for the first quarter of 2020 were only available for six Commonwealth countries. In addition, in the regression analyses, we have compared the percentage change in trade against the quarters before the outbreak of the trade war (for example, 2019Q3 is compared with 2015Q2–2018Q2).

Consequently, this report does not consider the issues concerning the economic drivers of trade flows. Rather, sections 2 and 3 delve into statistical detail vis-à-vis two of the structural drivers, namely the unresolved US–China trade wars and the impacts of COVID-19 on supply chain trade. Regarding the trade wars, we first report empirical trends in relation to evolution of actual Commonwealth countries' trade flows in sections 2.1 and 2.2, then we statistically isolate the drivers of those flows in sections 2.3 and 2.4. The same approach is applied to analysis of Commonwealth countries' supply chain trade in section 2.5. Section 3.1 repeats the approach to COVID-19 impacts, whereas section 3.2 provides a brief empirical review of changes to Commonwealth members' trade policies pursuant to COVID-19 containment strategies. Section 4 concludes.

2. The US–China trade war and Commonwealth countries' trade

Here, we explore the impact of the three phases of the US tariff increase on imports from China on Commonwealth countries' trade. We employ both empirical statistics and regression analysis methods. In the empirical analysis, we first present quarterly time-series plots of US imports from Commonwealth countries. To see the evolution of trade before and after the trade

Table 1. The US–China trade war timeline

Tariffs implemented on Chinese goods	Number of products (HS-6)	Main sectors/products affected by the tariff change	Targeted import values	New tariff imposed	Total average US tariff on Chinese goods increased to	Main potential effect
6 July 2018 (phase 1)	507	Machinery, mechanical appliances, and electrical equipment.	US$34 billion	25%	6.7%	It would raise costs within American companies' supply chains.
23 August 2018 (phase 1)	178	Machinery, mechanical appliances, and electrical equipment.	US$16 billion	25%	8.2%	It would raise costs within American companies' supply chains.
24 September 2018 (phase 2)	3,134	Intermediate goods (like computer and auto parts), and consumer goods such as telephone equipment, computers, furniture, lamps, and luggage.	US$200 billion	10%	12%	The new tariffs increasingly targeted American consumers directly.
1 September 2019 (phase 3)	1,300	The list covers final consumer goods, including toys, footwear, clothing and others.	US$112 billion	10%	21%	Directly raises prices for several household items.
15 January 2020 (phase four)		The new 15% US tariff on $162 billion worth of Chinese exports targeted for implementation on December 15 will not go into effect. Hence, US imports of consumer goods from China will not subject to new tariff changes.	US$162 billion	Reduces the 1 September 2019 tariffs to 7.5% for some consumer products.	19.3%	Still higher US tariff on intermediate goods, but some of the consumer goods will become cheaper following the deal.

Source: Authors' calculation based on data from Bown (2020); Bown and Kolb (2019); US International Trade Center.

Box 1. Key trade measures in the US–China trade war

The US accused China of violating intellectual property rights and unfair technology transfer that potentially undermines US firms' ability to compete fairly in the global market. Following the US trade representative Robert E Lighthizer's 14 August 2017 presidential memorandum, the US Trade Representative initiated an investigation under Section 301 of the Trade Act of 1974 to consider whether any of China's laws, polices, practices or actions were harming US intellectual property rights, innovation and technology development.

The investigation found that China was conducting unfair trading practices and the Trump administration imposed a 25 per cent phase 1 tariff on 818 tariff lines, affecting approximately US$34 billion worth of US imports from China on 6 July 2018. The phase 1 tariffed products list generally affects the 'Made in China 2025' industrial policy, including industries such as aerospace, robotics, information and communication technology, new materials, industrial machinery and automobiles. Similarly, in the second round of phase 1 (23 August 2018), the Trump administration imposed a 25 per cent tariff rate on a list of 284 tariff lines, affecting industrial intermediates in HS Chapters 39, 73, 84, 85, 87 and 90.

Due to China's retaliatory tariff on 15 June 2018, the Trump administration released another list of intermediate and consumer goods, worth US$200 billion of US imports from China, subject to new 10 per cent tariffs. Intermediate goods (such as computer and auto parts) comprise 50 per cent of the list, whereas consumer goods account for 24 per cent of the list, including telephones, computers, furniture, lamps and luggage (Bown & Kolb 2019). The US phase 2 tariffs on these US$200 billion worth of Chinese exports took effect on 24 September 2018.

On 13 August 2019, The Trump administration increased tariffs on US$112 billion worth of imports from China that had been not directly targeted by the phase 2 10 per cent tariff. The third phase new tariff hike targets mainly clothing and shoes. For example, footwear, clothing and textiles account for a third of the new tariff list. The other products include vegetable products, fuel, plastics and rubber, stone and glass, some toys and sports equipment, wood products, etc.

In the present text, we use terms such as 'before' and 'after' the trade war. The term 'before the trade war' refers to the period before the US implemented the phase 1 tariff hike on 6 July 2018, while 'after the trade war' refers to the period from 6 July 2018 to the end of the sample period.

war, we plot non-tariffed, phase 1 tariffed, phase 2 tariffed and phase 3 tariffed products separately. Following Nicita (2019), and as shown in Table 1, the phase 1 tariff changes (which came into effect on 6 July and 23 August 2018) include intermediate and capital goods; phase 2 (24 September 2018) targets both intermediate and cosumer goods; and phase 3 targets mainly clothing and shoes.

If the trade war caused trade diversion, Commonwealth countries' exports to the US are expected to increase after the tariff changes. To get additional insight into the impact of tariff changes across different sectors, we also plot the percentage change in the value of US imports from Commonwealth member countries at the sector level. To assess the degree of trade deflection, we provide empirical analysis of the exports of Chinese products to Commonwealth countries. If trade deflection occurs, exports to Commonwealth countries of those Chinese products upon which the US has imposed tariffs will increase.

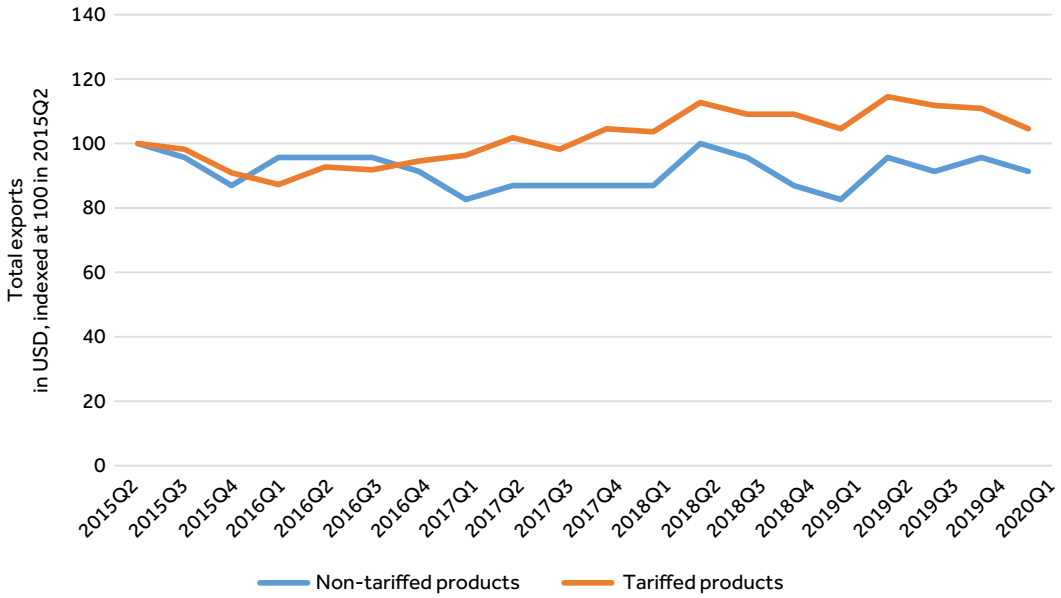
2.1 Empirical analysis

One approach to examine the effect of the US–China trade war on Commonwealth countries' exports is to compare the values of Commonwealth member countries' exports to the US of newly-tariffed Chinese products and non-tariffed Chinese products. An increase in Commonwealth countries' exports of tariffed products following commencement of the trade war, compared to products that are not subject to US tariffs, may suggest a potential trade diversion effect.

Figure 1 presents the evolution of tariffed and non-tariffed Commonwealth export products to the US. While no sizable difference is observed between the two groups, the export of tariffed products grew slightly more than the export of non-tariffed products. Relative to the 2015Q2 export level, the gap becomes increasingly larger after the onset of the US–China trade war, implying some potential trade diversion in favour of Commonwealth member countries due to the relatively lower tariff.

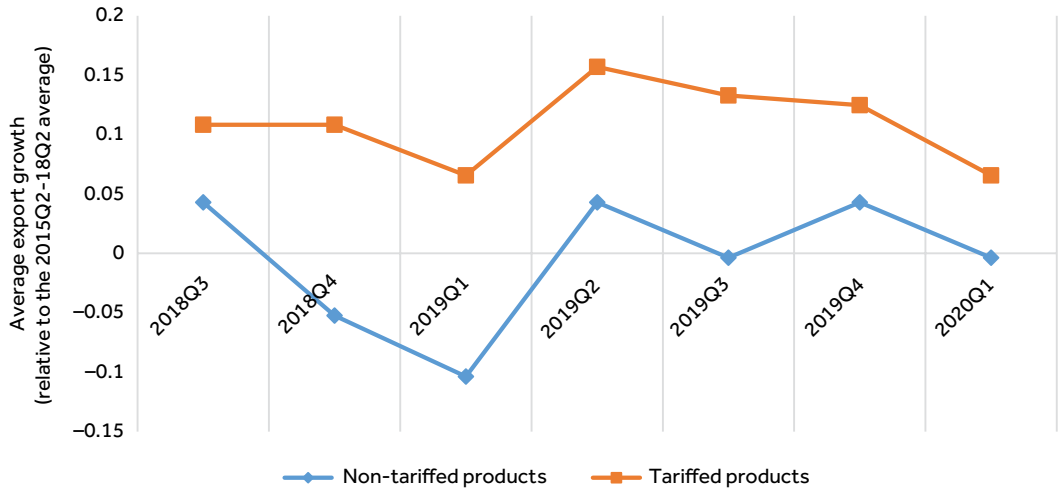
Figure 2 reports the percentage change in quarterly Commonwealth member countries' exports to the US for non-tariffed and all tariffed products. To control for seasonal patterns, the percentage change in quarterly exports is calculated against the average of the 2015Q2–2018Q2 quarters. As the figure clearly illustrates, the average export growth of non-tariffed products is considerably lower in the sample period. In contrast, the average growth of Commonwealth exports to the US

Figure 1. Total Commonwealth countries tariffed and non-tariffed exports to the US (indexed at 100 in 2015Q2)



Source: Authors' calculation based on data from the International Trade Centre (ITC).

Figure 2. Average Commonwealth export growth to the US for tariffed and non-tariffed products (relative to the average of the 2015Q2–2018Q2 growth)



Source: Authors' calculation based on data from the International Trade Centre (ITC).

has shown an encouraging growth rate, ranging between 6.5 per cent in 2019Q1 to 15.7 per cent in 2019Q2.

The quarterly export growth of for each tariffed and non-tariffed product is presented in Figure 3. As Figure 3 shows, for products that were not subject to the US tariff, the quarterly growth rate is relatively small, implying stable Commonwealth export performance for such products. The growth of tariffed export goods is relatively larger. Considering export of phase 2 tariffed products, Commonwealth countries' exports to the US were not growing significantly until 2019Q1. However, the export growth of phase 2 tariffed products sharply increased from the second quarter of 2019 and retained robust growth performance until the end of the sample period.

One potential explanation for the increase in US imports from Commonwealth countries may be the favourable economic environment in the US (see Figure 4), which can bolster domestic demand for foreign products. Immediately following the start of the COVID-19 pandemic,

Figure 3. Average Commonwealth export growth to the US for each tariffed and non-tariffed products (relative to the average of the 2015Q2–2018Q2 growth)

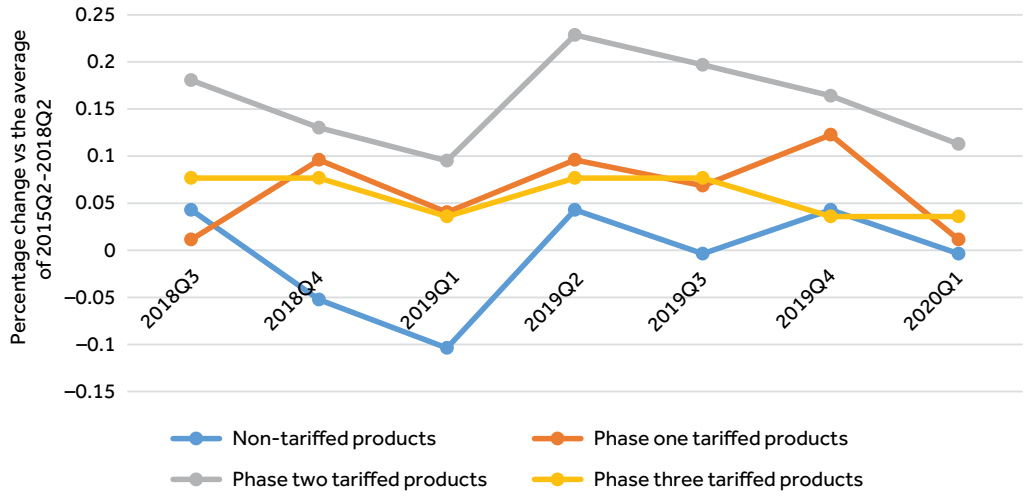
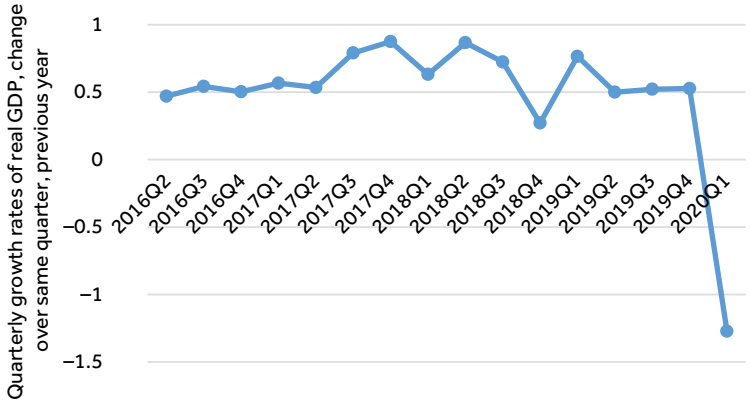


Figure 4. US quarterly growth rates of real GDP



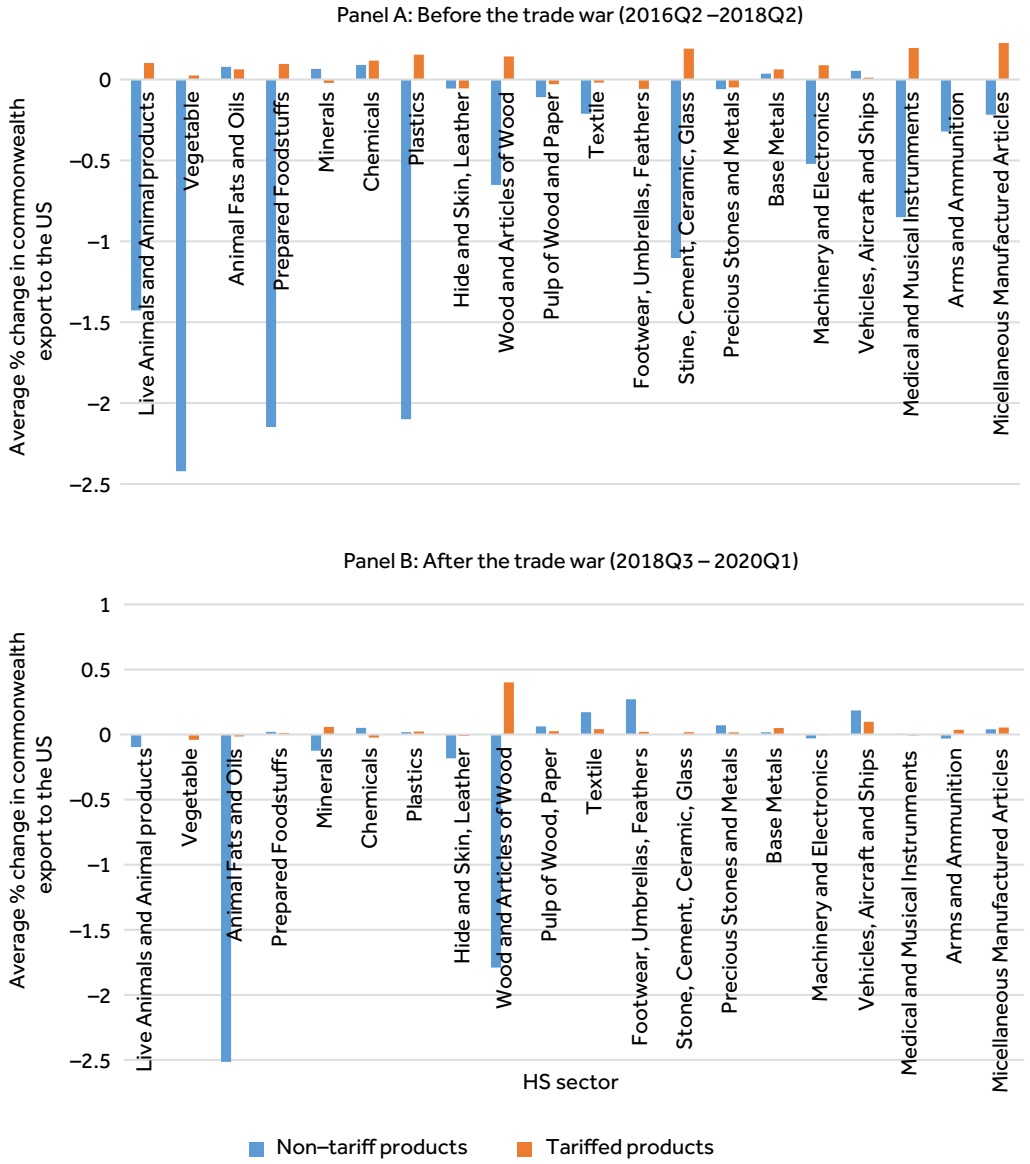
Source: Authors' calculation based on data from the Organisation for Economic Co-operation and Development (OECD) Stat.

however, the growth of Commonwealth member countries' exports to the US declined slightly. While Commonwealth exports showed moderate growth after the US–China trade war, it is difficult to attribute all this positive development to trade diversion, since the export growth of non-tariffed products also shows a somewhat similar trend. Comparatively, US quarterly real gross domestic product (GDP) growth also significantly declined during the first and the second phases of the trade war, which may have affected Commonwealth exports.

In order to compare the average growth of Commonwealth exports to the US before (2016Q2–2018Q2) and after (2018Q3–2020Q1) the trade war, we plotted the tariffed and non-tariffed products for the 20 main HS (harmonised system) sectors (Figure 5). Relatively, average Commonwealth exports significantly decline for non-tariffed products before the onset of the trade war. In particular, vegetables, prepared foodstuffs and plastics registered the largest average export growth decline in the 2016Q2–2018Q2 period. In contrast, average Commonwealth export growth for tariffed products was positive for several sectors. However, with the exception of animal fats and oils, and the wood and articles of wood sectors, the average growth of both the tariffed and non-tariffed products was relatively smaller after the trade war began. While this indicates a relatively good export performance for non-tariffed products, the export growth of tariffed products was somewhat lower after the trade conflict.

The previous figures show the export performance of all Commonwealth countries. Such plots mask important information about the heterogeneity of the potential

Figure 5. Average percentage change in Commonwealth sector exports to the US

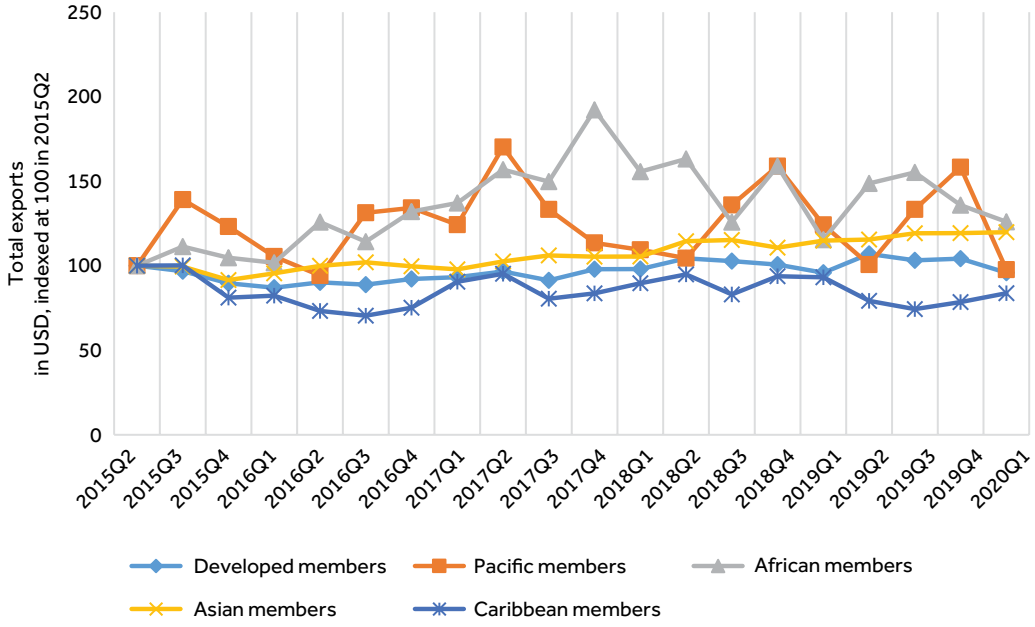


Source: Authors' calculation based on data from the International Trade Centre (ITC).

impact of the trade war on each member state. Commonwealth member countries are socially, politically and economically diverse. The member countries are also located in different geographical regions and continents (Africa, Asia, the Caribbean, Europe and the Pacific), which leads to variation in trade costs. For instance, owing to lack of well-developed infrastructure facilities, a landlocked African Commonwealth member state will face higher freight costs to trade goods abroad. Such differences will give rise to discrepancies in responding to potential changes (such as the trade war) in the international demand for its export products.

To observe the heterogeneous effect of the trade conflict on the export performance of different groups of Commonwealth countries, we classified the member countries into five groups. They are: (1) developed Countries (Australia, Canada, Cyprus, Malta, New Zealand and United Kingdom); (2) Africa (Botswana, Cameroon, Eswatini, The Gambia, Ghana, Kenya, Lesotho, Malawi, Mozambique, Namibia, Nigeria, Rwanda, Sierra Leone, South Africa, United Republic of Tanzania, Mauritius, Seychelles, Uganda and Zambia); (3) Asia (Bangladesh, Brunei Darussalam, India, Malaysia, Pakistan, Sri Lanka, Maldives and Singapore); (4) the Caribbean (Antigua and Barbuda, The Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Jamaica, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, and Trinidad and Tobago); and

Figure 6. Export of Commonwealth country groups to the US (indexed at 100 in 2015Q2)



Source: Authors' calculation based on data from the International Trade Centre (ITC).

(5) the Pacific (Fiji Islands, Kiribati, Nauru, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu).

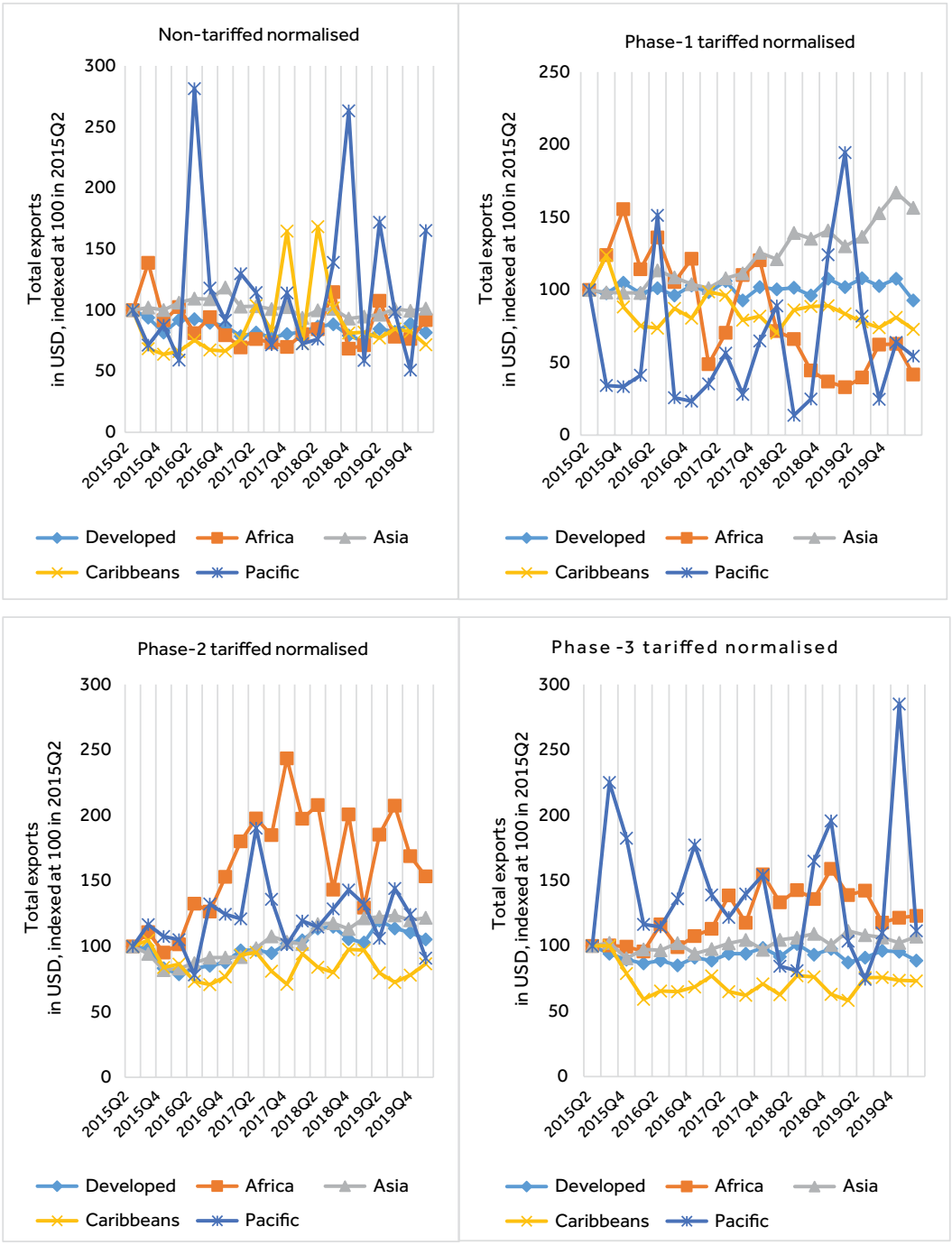
Figure 6 presents the time series plot of exports to the US by the different Commonwealth regions, indexed at 100 in 2015Q2. Developed Commonwealth member countries' exports to the US remained stable in the sample period. Similarly, the exports of the Caribbean and Asian members show a stable trend, although Asian members' exports slightly picked up after the US–China trade war. Among the five Commonwealth regions, African and Pacific member countries registered the most erratic export performance in the period. The Pacific region's exports exhibit a seasonal nature, increasing in the third and fourth quarters of the year and decreasing in the first and second quarters of the year. For Africa, while exports were growing until 2017, they fluctuate considerably after the start of the US–China trade conflict.

In addition to the indexed charts that allow a comparison of the evolution of export performance for each region, we also provide the actual export of the different Commonwealth regions to the US in Figure A2 in the appendix. As expected, Developed Commonwealth members provided the largest quantity of exports to the US, followed by Asia, Africa, the Caribbean and the Pacific member regions. With the exception of Asian Commonwealth members exports, which registered a slight increase after the trade war, exports from the other Commonwealth regions remained stable over the sample period.

While the aggregate exports of the different Commonwealth country groups were unaffected by the US–China trade tension collectively, the export of tariffed products to the US may have increased relative to non-tariffed products, since China's exports to the US became more expensive after the tariff hike. To examine such trends, we plot the non-tariffed and tariffed products for each different Commonwealth country group in Figure 7.

Figure 7 shows four key developments after the trade conflict. First, except for the Pacific countries, Commonwealth members export products that are not subject to US tariff changes; exports remained steady in the sample period for all four Commonwealth country groups.[1] Second, while the Asian export of phase 1 tariffed products significantly increased after the trade war, the exports of Africa and Caribbean members declined. The exports of developed Commonwealth members remained steady. Third, the export of African phase 2 tariffed products showed a large increase before and after the trade war. Thus, developed and, moreover, Asian Commonwealth members might be the potential beneficiaries of trade

Figure 7. Different exports of Commonwealth country groups to the US (2015Q2–2020Q1)



Source: Authors' calculation based on data from the International Trade Centre (ITC).

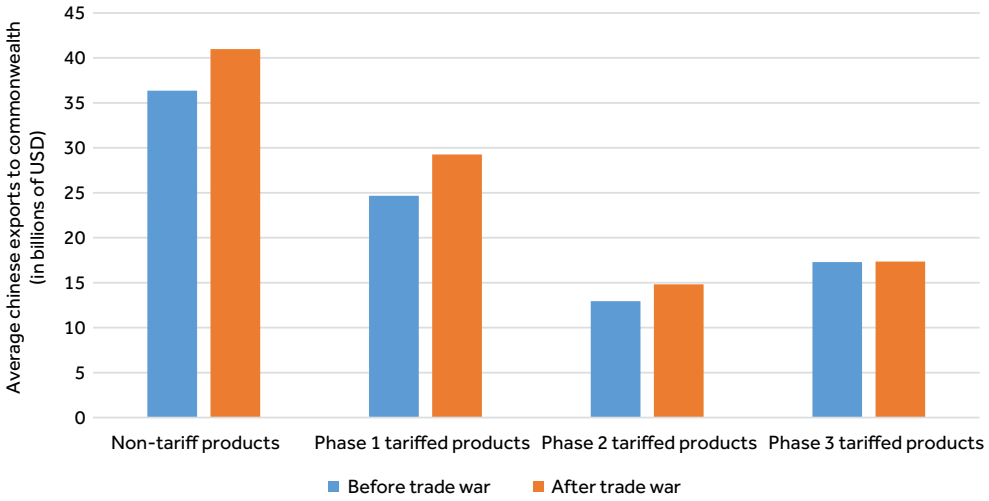
diversion from China to third countries for intermediate products and Africa members have benefited when Chinese consumer good exports faced higher US tariffs.

2.2 Trade deflection

If the trade war caused trade diversion, Chinese exports to the US would decline and Commonwealth countries' exports to the US would be expected to increase after the tariff changes, to the extent that Commonwealth countries are competitive relative to other suppliers. This, however, would potentially lead to trade deflection if China's exports to Commonwealth countries of products the US has subjected to new tariffs, increase. To assess the degree of trade deflection, we provide the following empirical analyses for exports of Chinese products to Commonwealth countries.

Figure 8 presents average quarterly Chinese exports of tariffed and non-tariffed products to Commonwealth member countries, before and

Figure 8. Trade deflection of Chinese exports (2015Q2–2020Q1)

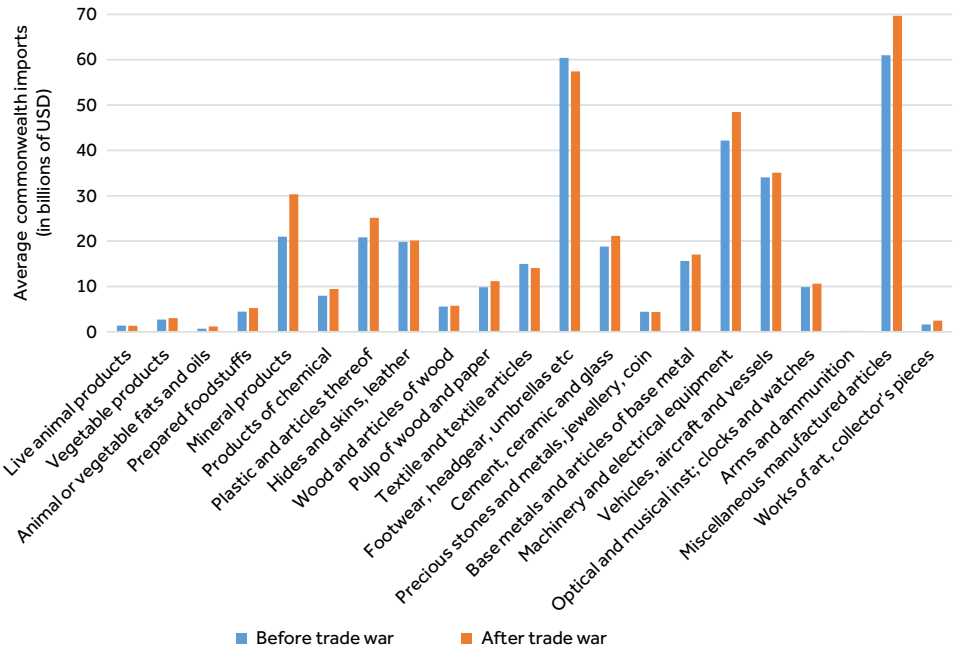


Source: Authors' calculation based on data from the International Trade Centre (ITC).

after the trade war. Average quarterly exports of non-tariffed products constitute the largest share of Chinese exports to Commonwealth countries. The average quarterly exports of Chinese products to Commonwealth countries subjected to US phase 1 and phase 2 tariffs increased. However, the observed surge in Chinese exports to Commonwealth countries may not have been caused by the US tariff change on Chinese products. The export increase could be owing to other factors that are likely to raise Chinese exports to Commonwealth countries and Commonwealth countries' demand for Chinese products. This potential explanation seems also plausible, since the import of the non-tariffed Chinese products increased after the US–China trade war.

Figure 9 presents average Commonwealth members' sectoral imports from China before and after the trade war. Clearly, with the exception of sector XII (which includes footwear, headgear, umbrellas and others), the average Commonwealth imports from China increased in all sectors after the trade war began. More importantly, average Commonwealth imports from China significantly increased in the minerals, machinery and electrical equipment,

Figure 9. Trade deflection of Chinese exports across sectors



Source: Authors' calculation based on data from International Trade Centre (ITC).

vehicles, aircraft and vessels, and miscellaneous manufactured articles sectors, implying a potential trade deflection in those sectors.[2]

2.3 Estimating the US–China trade war impact on Commonwealth exports to the US

In this section, we formally investigate the impact of the US–China trade war on Commonwealth exports to the US. The US tariff was expected to reduce the competitiveness of Chinese products. Therefore, US importers would replace expensive Chinese products by a potentially less costly Commonwealth member product. This is called the trade diversion effect of tariffs. Following Nicita (2019), we estimated the following regression equation to quantify the impact of the US tariffs (on Chinese products) on Commonwealth countries exports:

$$\begin{aligned}\Delta X_{it} = {} & \beta_1 + \beta_2 \Delta C_{it} + \beta_3 T_{it}^1 + \beta_4 T_{it}^2 + \beta_5 T_{it}^3 \\ & + \beta_6 T_{it}^1 * \Delta C_{it} + \beta_7 T_{it}^2 * \Delta C_{it} + \beta_8 T_{it}^3 * \Delta C_{it} \\ & + \mu_z + \theta_t + \varepsilon_i \end{aligned} \quad (1)$$

Where, ΔX_i is the change in Commonwealth countries' exports to the US, and ΔC_{it} is a control that represents US imports of China's goods. In particular, ΔX_i is the difference between X_t (exports of quarter t after the trade war) and $\overline{X}$, where $\overline{X}$ is a fixed baseline constructed from the average of exports prior to the outbreak of the trade war. Similarly, ΔC_{it} is constructed by taking the difference between US imports from China in quarter t and the fixed baseline (average exports before the trade war). T_i^1, T_i^2 and T_i^3 are dummy variables that are equal to one if product i is subject to US tariffs on China either in phase 1 (which became effective on 6 July and 23 August 2018), phase 2 (which became effective on 24 September 2018) or phase 3 (which became effective on 1 September 2019). β_2 captures the correlation of US imports from China and US imports from Commonwealth countries in the absence of tariffs. μ_z is the product fixed effect and ε_i is the error term. β_3, β_4 and β_5 capture the overall effect of the trade war on Commonwealth countries' exports to the US. The coefficient of the interaction term represents the trade diversion effect on goods subject to the US tariffs. The coefficient of the interaction term isolates the trade diversion effects of US tariffs (on Chinese goods) on Commonwealth exports. In other words, β_6, β_7 and β_8 denote the trade diversion impact that measures the replacement of Chinese goods that are subject to US tariffs by the exports of Commonwealth countries. If the later coefficients are negative, then Chinese exports to the US are negatively associated with Commonwealth exports to the US, which indicates the presence of trade diversion.

Table 2 presents the regression result for the impact of the US–China trade war on Commonwealth exports to the US. Columns (1) through (3) present the effect of the tariff increase

Table 2. The effect of US–China trade war on US imports from Commonwealth countries

	(1)	(2)	(3)
	2018	2019	2020
Percentage Δ in Import from china	0.685***	0.443***	0.763***
	(0.059)	(0.064)	(0.073)
Phase 1 tariffs	0.577***	1.084***	0.120
	(0.185)	(0.238)	(0.273)
Phase 2 tariffs	0.547***	1.019***	0.307
	(0.148)	(0.229)	(0.270)
Phase 3 tariffs	0.346***	0.592***	–0.098
	(0.113)	(0.161)	(0.206)
P1*ΔCHN	–0.596***	–0.420***	–0.756***
	(0.065)	(0.070)	(0.093)
P2*ΔCHN	–0.577***	–0.388***	–0.663***
	(0.065)	(0.063)	(0.082)
P3*ΔCHN	–0.663***	–0.421***	–0.701***
	(0.067)	(0.069)	(0.092)
Sector FE	Yes	Yes	Yes
Constant	–1.236***	–1.824***	–0.101
	(0.126)	(0.188)	(0.220)
Observations	10932	21864	5466
*R*2	0.404	0.352	0.418

*The dependent variable is the percentage change in US imports from Commonwealth countries. As show in equation (1), all the three specifications include HS 4-digit fixed effects. Clustered standard errors are reported in parentheses: * p < 0.10, ** p < 0.05, *** p < 0.01.*

from the second quarter of 2018 (when the US started imposing tariffs on US$48 billion worth of US steel and aluminium imports from several countries) to the first quarter of 2020 (where the phase 1 trade deal went into effect). The positive and statistically significant coefficient of the change in US imports from China (ΔC_{it}) in all the years after the trade war indicates that China's and Commonwealth countries' exports to the US are positively correlated in normal times. This is expected, since the US geneally increases its imports from China and elsewhere if the economic climate largely improves.

Considering the overall impact of US tariff increases on Chinese products on Commonwealth exports, phase 1, phase 2 and phase 3 tariffs significantly and positively increased Commonwealth exports to the US in 2018 and 2019. Contrarily, all three phases of US tariff hikes on Chinese products did not significantly increase Commonwealth countries exports to the US in the first quarter of 2020.
The coefficients of the interaction terms present the trade diversion impact of the US–China trade conflict. Phase 1, phase 2 and phase 3 US tariffs on imports from China resulted in trade diversion to Commonwealth countries. In addition, the magnitude of the trade diversion effects was especially large in 2018 and 2020. For instance, the magnitude of the phase 1 impact in 2018 and 2020 was 60 cents per dollar and 76 cents per dollar, respectively. All the statistically significant coefficients demonstrate that the trade diversion effect in favour of Commonwealth member countries increased over time, except a relatively modest decline in 2019. Thus, the substitution effect of US imports from China with imports from Commonwealth countries has increased over time. Furthermore, the estimates show that the phase 1 and phase 3 tariff changes have resulted in comparatively larger trade diversion effects than the phase 2 tariff changes. Nicita (2019) also finds that US tariffs against China reduced imports from China by about 25 per cent. The reduction in the import of tariffed Chinese products led to trade diversion in favour of mainly Mexico, Taiwan, the EU and Vietnam. The study indicates Commonwealth countries such as India and Canada benefited between US$0.9 and US$1.5 billion. Some sub-Saharan and South East Asian Commonwealth members also benefited from the trade diversion effects (Nicita 2019).

2.4 The effect of the trade war on each Commonwealth member country group

Which Commonwealth member regions benefited from the identified trade diversion effects? We quantified the impact of the US–China trade war on Commonwealth country groups by re-estimating equation (1) for the five groups.

Table 3 to Table 7 present the estimated results. Like Table 2, each column reports the estimated annual overall and trade diversion

Table 3. US–China trade war impacts on US imports from developed Commonwealth member countries

	(1)	(2)	(3)
	2018	2019	2020
Percentage Δ in Import from china	0.598***	0.390***	0.660***
	(0.056)	(0.058)	(0.071)
Phase 1 tariffs	0.732***	1.105***	0.363
	(0.180)	(0.225)	(0.252)
Phase 2 tariffs	0.590***	0.932***	0.455*
	(0.144)	(0.219)	(0.256)
Phase 3 tariffs	0.404***	0.625***	0.113
	(0.113)	(0.152)	(0.193)
P1*ΔCHN	–0.524***	–0.397***	–0.614***
	(0.065)	(0.066)	(0.091)
P2*ΔCHN	–0.502***	–0.335***	–0.543***
	(0.060)	(0.056)	(0.080)
P3*ΔCHN	–0.609***	–0.400***	–0.603***
	(0.066)	(0.064)	(0.092)
Sector FE	Yes	Yes	Yes
Constant	–1.295***	–1.795***	–0.270
	(0.123)	(0.177)	(0.205)
Observations	10932	21864	5466
*R*2	0.433	0.426	0.396

*The dependent variable is the percentage change in US imports from developed Commonwealth countries. As shown in equation (1), all the three specifications include HS 4-digit fixed effects. Clustered standard errors are reported in parentheses: * p < 0.10, ** p < 0.05, *** p < 0.01.*

Table 4. US–China trade war impacts on US imports from African Commonwealth member countries

	(1)	(2)	(3)
	2018	2019	2020
Percentage Δ in Import from china	0.126***	0.105***	0.144***
	(0.029)	(0.021)	(0.035)
Phase 1 tariffs	–0.292**	–0.300**	–0.561***
	(0.141)	(0.127)	(0.190)
Phase 2 tariffs	0.023	–0.067	–0.182
	(0.104)	(0.101)	(0.141)
Phase 3 tariffs	0.138	0.003	–0.103
	(0.109)	(0.105)	(0.145)
P1*ΔCHN	–0.122***	–0.100***	–0.153**
	(0.041)	(0.030)	(0.066)
P2*ΔCHN	–0.129***	–0.115***	–0.118***
	(0.032)	(0.025)	(0.043)
P3*ΔCHN	–0.078	–0.053*	–0.077
	(0.060)	(0.030)	(0.068)
Sector FE	Yes	Yes	Yes
Constant	–0.226**	–0.122	0.015
	(0.098)	(0.094)	(0.132)
Observations	10932	21864	5466
$R2$	0.2498	0.2165	0.328

*The dependent variable is the percentage change in US imports from African Commonwealth member countries. As shown in equation (1), all the three specifications include HS 4-digit fixed effects. Clustered standard errors are reported in parentheses: * p < 0.10, ** p < 0.05, *** p < 0.01.*

Table 5. US–China trade war impacts on US imports from Asian Commonwealth member countries

	(1)	(2)	(3)
	2018	2019	2020
Percentage Δ in Import from china	0.442***	0.344***	0.542***
	(0.060)	(0.056)	(0.068)
Phase 1 tariffs	–0.034	0.179	–0.486*
	(0.184)	(0.178)	(0.254)
Phase 2 tariffs	0.100	0.231*	–0.230
	(0.130)	(0.139)	(0.156)
Phase 3 tariffs	–0.028	–0.013	–0.310**
	(0.117)	(0.122)	(0.152)
P1*ΔCHN	–0.337***	–0.295***	–0.446***
	(0.073)	(0.068)	(0.110)
P2*ΔCHN	–0.402***	–0.303***	–0.488***
	(0.061)	(0.057)	(0.073)
P3*ΔCHN	–0.343***	–0.259***	–0.363***
	(0.078)	(0.064)	(0.085)
Sector FE	Yes	Yes	Yes
Constant	–0.255**	–0.499***	–0.636***
	(0.116)	(0.121)	(0.139)
Observations	10932	21864	5466
$R2$	0.2498	0.283	0.355

*The dependent variable is the percentage change in US imports from Asian Commonwealth member countries. As shown in equation (1), all the three specifications include HS 4-digit fixed effects. Clustered standard errors are reported in parentheses: * p < 0.10, ** p < 0.05, *** p < 0.01.*

impact of the US tariff hikes on Chinese products for Commonwealth groups' exports to the US. Sector-level fixed effects that capture the specific changes in each sector (such as demand changes for commodities) are controlled in all regressionspecifications.

As shown in the first row of Table 3, Chinese exports and developed Commonwealth member countries' exports to the US are positively correlated, implying a favourable economic condition in the US may lead to an upsurge in US imports from both China and developed Commonwealth members in normal times. The coefficient estimates of the three interaction terms in Table 3 reveal that US tariffs on Chinese imports resulted in trade diversion in favour of developed Commonwealth member countries in 2018, 2019 and 2020.

Table 6. US–China trade war impacts on US imports from Caribbean Commonwealth member countries

	(1)	(2)	(3)
	2018	2019	2020
Percentage Δ in Import from china	0.035**	0.025**	0.037*
	(0.018)	(0.012)	(0.022)
Phase 1 tariffs	0.029	0.091	–0.035
	(0.095)	(0.088)	(0.110)
Phase 2 tariffs	–0.012	–0.019	0.000
	(0.057)	(0.048)	(0.066)
Phase 3 tariffs	–0.023	–0.049	–0.036
	(0.063)	(0.051)	(0.070)
P1*ΔCHN	–0.052**	–0.032	–0.075**
	(0.024)	(0.020)	(0.038)
P2*ΔCHN	–0.018	–0.009	–0.006
	(0.023)	(0.014)	(0.026)
P3*ΔCHN	–0.058**	–0.025	–0.035
	(0.024)	(0.019)	(0.028)
Sector FE	Yes	Yes	Yes
Constant	0.028	0.045	0.038
	(0.054)	(0.042)	(0.051)
Observations	10932	21864	5466
$R2$	0.264	0.244	0.325

*The dependent variable is the percentage change in US imports from Caribbean Commonwealth member countries. As shown in equation (1), all the three specifications include HS 4-digit fixed effects. Clustered standard errors are reported in parentheses: * p < 0.10, ** p < 0.05, *** p < 0.01.*

Table 7. US–China trade war impacts on US imports from Pacific Commonwealth member countries

	(1)	(2)	(3)
	2018	2019	2020
Percentage Δ in Import from china	–0.002	0.001	–0.001
	(0.004)	(0.004)	(0.006)
Phase 1 tariffs	–0.049	–0.074	–0.093
	(0.066)	(0.063)	(0.092)
Phase 2 tariffs	–0.004	–0.017	–0.044
	(0.036)	(0.035)	(0.053)
Phase 3 tariffs	–0.013	–0.004	0.001
	(0.048)	(0.043)	(0.061)
P1*ΔCHN	–0.008	–0.003	–0.015
	(0.009)	(0.006)	(0.024)
P2*ΔCHN	0.008	–0.001	0.011
	(0.006)	(0.005)	(0.009)
P3*ΔCHN	0.000	–0.004	0.006
	(0.007)	(0.007)	(0.012)
Sector FE	Yes	Yes	Yes
Constant	0.013	0.011	0.029
	(0.038)	(0.035)	(0.051)
Observations	10932	21864	5466
$R2$	0.265	0.240	0.314

*The dependent variable is the percentage change in US import from Pacific Commonwealth member countries. As shown in equation (1), all the three specifications include HS 4-digit fixed effects. Clustered standard errors are reported in parentheses: * p < 0.10, ** p < 0.05, *** p < 0.01.*

Interestingly, the trade diversion effect also generally increases from 2018 to the first quarter of 2020, indicating a potential replacement of more costly Chinese imports by developed Commonwealth member exports. There may also be a potential trade diversion effect after 2020Q1. However, we have not seen the most recent quarters of 2020, since export data are not available after 2020Q1. Furthermore, the overall effect of the US tariff increases on developed Commonwealth member countries' exports to the US is also considerably larger and positive.

Table 4 presents the effect of the US–China trade war on the 19 African Commonwealth member countries. The trade diversion effect is observed only with the phase 1 and phase 2 tariff increases. While phase 3 tariff changes did not result in trade diversion effects in favour of African members in 2018 and 2020, phase 3 did lead to marginal significant trade diversion effects in 2019. Another notable finding in

Table 4 is that while phase 2 and phase 3 had neutral overall impacts, the phase 1 tariffhikes led to an overall negative effect on African Commonwealth members' exports to the US.

Table 5 presents the impact of the US–China trade war on Asian Commonwealth exports to the US. Although the higher US tariff on Chinese goods diverted trade in favour of Asian members, the overall effect of the tariff change is insignificant. In general, only the phase 2 tariff changes led to a significant positive effect in 2019 for Asian Commonwealth member countries.

In contrast, Table 6 and Table 7 show that the US tariff on Chinese imports did not result in significant trade diversion benefits to Caribbean and Pacific Commonwealth member countries, suggesting the result observed in Table 2 is driven mainly by developed Commonwealth member countries. In general, the regression estimates conclude that costly Chinese imports are mainly replaced by relatively cheaperimports from developed Commonwealth member countries.[3]

2.5 Trade war and supply chain trade

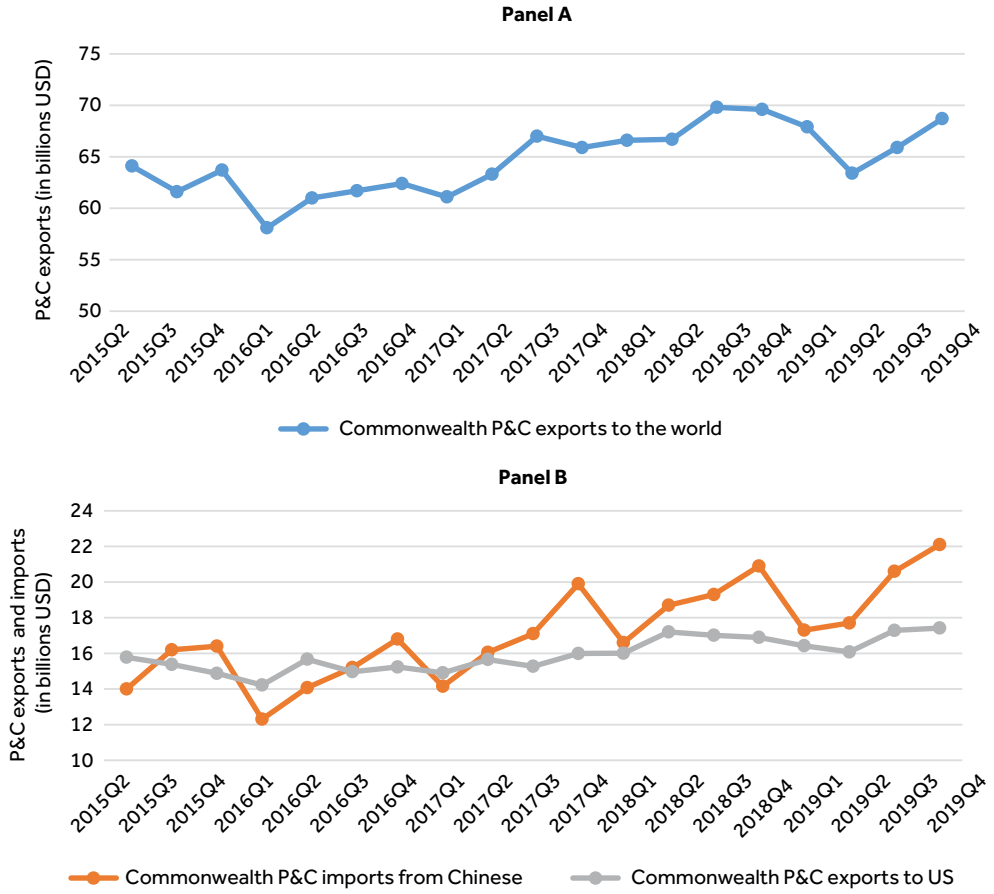
This section focuses on exploring the disruptive impact of the US–China trade war on the participation of Commonwealth countries in global value chains (GVCs). The first methodology we employed was to conduct an empirical analysis for the 'parts and components' (intermediate products) imports and exports of Commonwealth countries. Parts and components (P&C) trade is trade in intermediate products that predominantly includes high-tech goods such as pharmaceuticals and chemicals, computers, electronic and electrical equipment, machinery, motor vehicles, and other transport equipment (Javorcik 2020). If a given region or country is strongly integrated in the global value chain, then the import and/or export of parts and components is expected to be higher. Therefore, by presenting the parts and components trade data before and after the trade war, we can derive some insight into the evolution of supply chain trade during and after the shock. Furthermore, potentially Chinese imports that are now subject to US tariffs may be deflected to the US market through a third market, such as a Commonwealth member. Having mapped intermediate imports into Commonwealth members, we should be able to connect Chinese trade deflection of those same products, into Commonwealth members. This will give us a sense of opportunities (more imports at lower prices) and threats (Chinese imports displacing domestic production).

The second methodology is a regression analysis.

Following Kimura, Takahashi and Hayakawa (2007), we adopted Standard International Trade Classification (SITC) Revision 2 to extract the parts and components commodities for our analysis. Kimura, Takahashi and Hayakawa (2007) argue that SITC Revision 2 provides more detailed commodity classifications, particularly in machinery and transport goods. We then convert SITC Revision 2 parts and components product codes to the harmonised system (HS) 2007 code where ITC trade data is reported.[4] The ITC database has parts and components exports for 31 Commonwealth members only in the 2015Q2–2020Q1 period. Furthermore, parts and components export for 2020Q1 is available for only six Commonwealth members: Canada, Mauritius, Mozambique, New Zealand, South Africa, and the UK.

Figure 10 reports the evolution of parts and components trade for the Commonwealth countries. Panel A provides the global parts and components exports of the 31 Commonwealth members for which we have data. In each quarter, these Commonwealth countries exported US$60–70 billion worth of intermediate products to the world. Remarkably, the 31 Commonwealth members' exports of these goods have generally increased over time, implying the growing integration of Commonwealth countries into global supply chain trade. However, export of parts and components declined sharply as soon as the US–China trade war started, quickly recovering after 2019Q2. Commonwealth parts and components exports to the US showed a similar trend in the sample period (see Panel B in Figure 10). Exports to the US declined slightly in 2018Q3 and rebounded in 2019Q2. The slight decline in Commonwealth exports to the US might be owing to the complementary nature of intermediate inputs sourced from China and Commonwealth countries. Figure 10 also plots the Commonwealth countries' import of parts and components from China. While Chinese exports grew over time, they

Figure 10. Parts and components (P&C) trade of Commonwealth member countries



Source: Authors' calculation based on data from International Trade Centre (ITC).

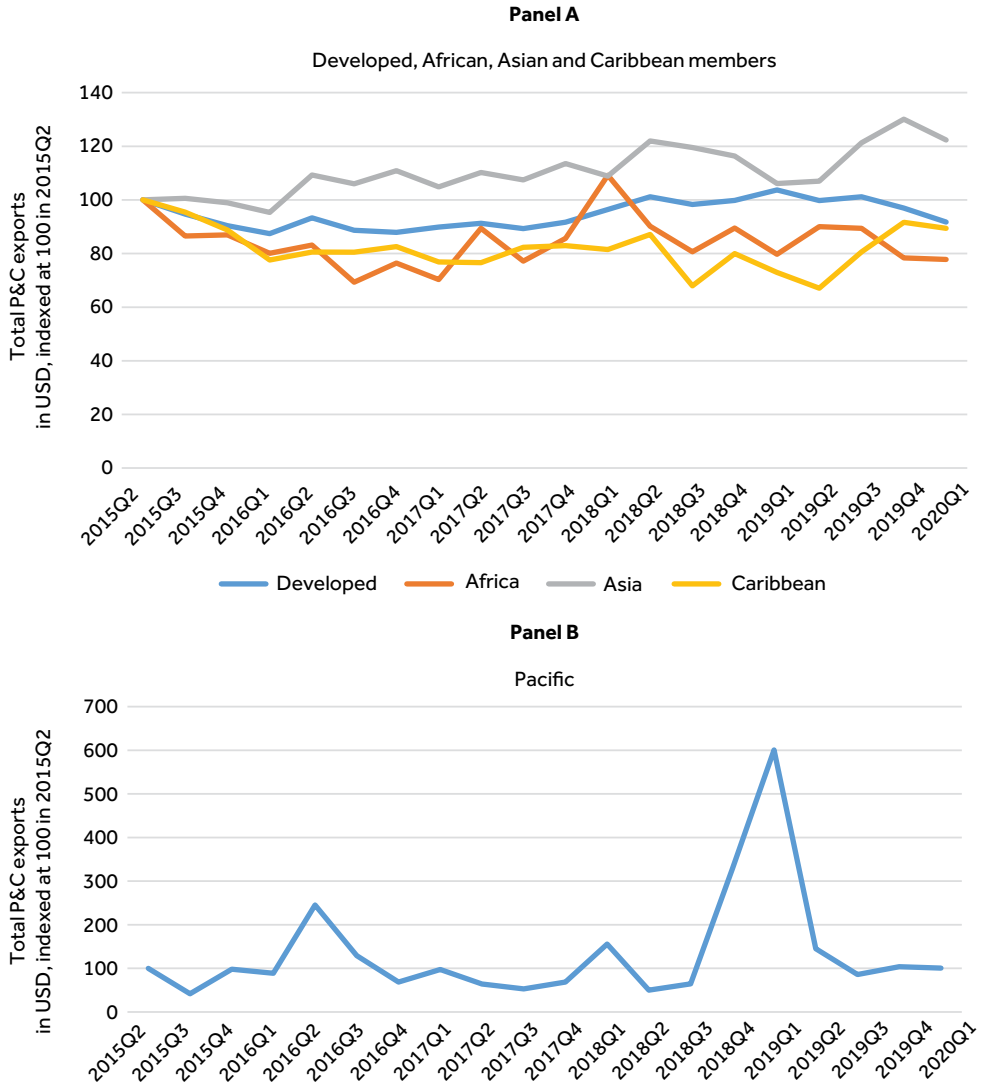
also demonstrate significant seasonality, which was slightly impacted by the trade conflict.

Figure 11 illustrates the indexed parts and components exports of each Commonwealth country group to the US. While the exports of developed Commonwealth members remained stable overtime, the exports of Asian, African and Caribbean Commonwealth member countries to the US demonstrated non-trivial change after the US–China trade war started. In particular, Asian parts and components exports showed a marked increase, suggesting the region was an important source of supply chain trade with the US following the shock. In contrast, the exports of African and Caribbean parts and components declined after the onset of the trade war. Pacific parts and components export to the US remained flat in the sample period, except for the big spike in 2019Q1.

Figure A5 (in the appendix) presents the actual parts and components exports of the Commonwealth member countries. Developed member countries export the largest share of intermediate inputs (close to US$9 billion every quarter) followed by Asia, Africa, the Caribbean and Pacific countries, respectively. Similar to total trade, Commonwealth countries' parts and components exports to the US is mainly accounted for by the developed and Asian member states. Conversely, the export of the latter three regions is stagnant overtime, signifying the relatively limited integration of these countries into global trade.

Figure 12 presents the indexed Commonwealth group members' exports of parts and components to the US (Pacific region exports are excluded as they exhibited too much fluctuation). The export of non-tariffed products did not show any major change for all groups. As far as phase 1 tariffed goods were concerned, Asian Commonwealth members' parts and components exports increased, implying the strong integration of the region into global value chains. A clear downward trend was also discerned in the phase 2 tariffed products parts and components exports. Following the trade war, Asian parts and components exports increased, while Caribbean countries' parts and

Figure 11. Commonwealth member country groups' exports to the US



Source: Authors' calculation based on data from International Trade Centre (ITC).

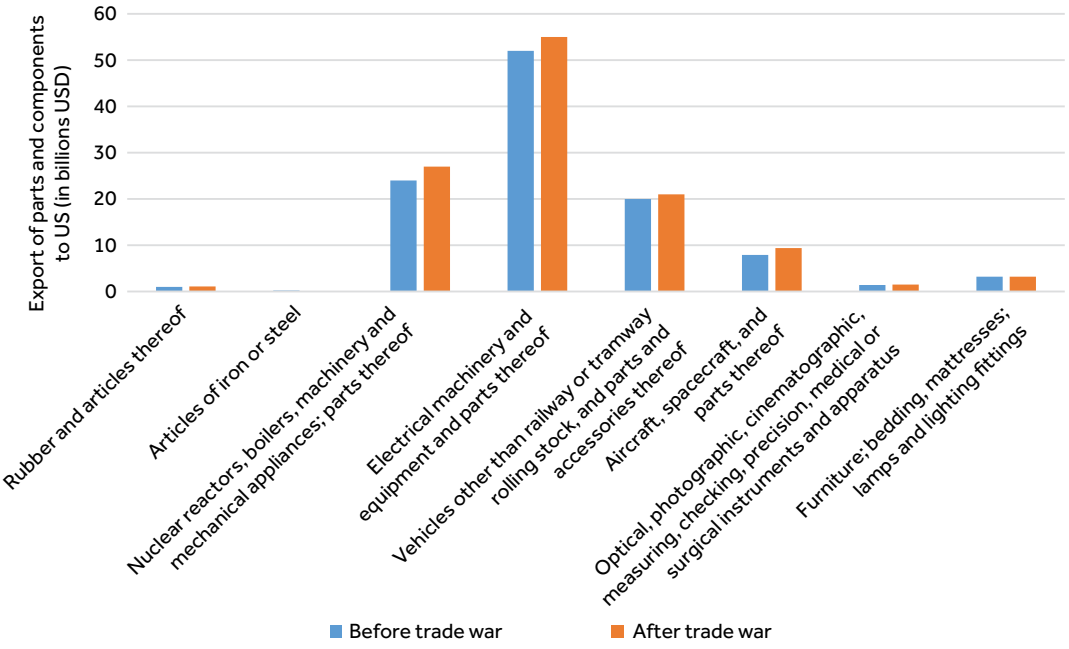
components exports to the US dropped significantly. The phase 3 products, on the other hand, did not show a clear pattern due to the trade war.

Figure A6 in the appendix also provides the actual parts and components export figures. In relative terms, phase 1 and phase 2 products accounted for the largest value of exported items for almost all Commonwealth member regions over the previous five years. For example, developed Commonwealth member countries managed to export more than US$4 billion worth of phase 1 and phase 2 parts and components to the US every quarter. Considering the parts and components export patterns of the Commonwealth countries in Figure A6, phase 1 products registered modest increases after 2017 in developed, Asian and Caribbean Commonwealth member regions. In contrast, phase 2 export items showed a visible decline in developed, African and Caribbean members following the US–China trade war, indicating a potential uneven effect of the trade war on Commonwealth countries' intermediate trade. Compared to other export products, the pattern of non-tariffed products remained flat, with some variation, in Asia and the Caribbean. Figure 13 reports total parts and components trade before and after the trade war for several HS two-digit products. Clearly, Chapter 85 (HS code)[5] contains the largest segment of parts and components exports. The subsequent major export intermediate items are Chapter 84 (nuclear reactors, boilers, machinery and

Figure 12. Parts and components exports to the US by different Commonwealth country groups

Source: Authors' calculation based on data from the International Trade Centre (ITC).

Figure 13. Total Commonwealth exports of parts and components to the US



Source: Authors' calculation based on data from International Trade Centre (ITC).

mechanical appliances; parts thereof); Chapter 87 (vehicles other than railway or tramway rolling stock, and parts and accessories thereof); and Chapter 88 (aircraft, spacecraft, and parts thereof).

Remarkably, the aggregate parts and components exports of the four major HS chapters showed significant increases after the US–China trade war. While we cannot rule out other potential factors, the trade conflict between the two giant economies may open up an opportunity for Commonwealth member countries to scale up supply chain trade. As economic theory proposes, US tariffs on Chinese products will reduce the competitiveness of the intermediate products that are subjected to tariffs. This can provide increasing export opportunities for Commonwealth countries.

Although the preceding figures provide important information about the scale and pattern of supply chain trade, they do not quantify the effects of the US imposing higher tariffs on Chinese imports on Commonwealth trade. Accordingly, we employed regression analysis to investigate the impact of the trade war on the supply chain trade for the Commonwealth countries. Following Nicita (2019), the regression model is specified as:

$$\Delta X_{it} = \beta_1 + \beta_2 \Delta C_{it} + \beta_3 T_{it}^1 + \beta_4 T_{it}^2 + \beta_5 T_{it}^3 + \beta_6 T_{it}^1 * \Delta C_{it} + \beta_7 T_{it}^2 * \Delta C_{it} + \beta_8 T_{it}^3 * \Delta C_{it} + \mu_z + \theta_t + \varepsilon_i \quad (2)$$

Where, ΔX_i is the change in the Commonwealth countries intermediate inputs export to the US and ΔC_i represents the US import of intermediate inputs from China. T_i^1, T_i^2, T_i^3, β_3, β_4, β_5 are as defined above. β_6, β_7, and β_8 measure the trade diversion impact of the higher tariffs charged on imports from China on the export of Commonwealth products to the US.

Row one of Table 8 indicates that Chinese and Commonwealth parts and components exports are positively correlated only in 2018 and 2019. Although it is not statistically significant, the coefficient for the first quarter of 2020 also shows a positive association between Chinese and Commonwealth exports to the US. This is not surprising, given the strong interdependence of many Commonwealth countries and China in the global value chain. The significant positive association is only reversed in 2020Q1 (when the COVID-19 pandemic started to spread).

Table 8. US–China trade war impacts on Commonwealth countries' parts and components exports to the US

	(1)	(2)	(3)
	2018	2019	2020
Percentage Δ in Import from china	0.671***	0.525***	0.445
	(0.118)	(0.174)	(0.290)
Phase 1 tariffs	0.194	0.266	–0.085
	(0.251)	(0.282)	(0.342)
Phase 2 tariffs	0.088	0.190	–0.176
	(0.235)	(0.238)	(0.368)
Phase 3 tariffs	0.069	0.022	–0.286
	(0.243)	(0.217)	(0.367)
P1*ΔCHN	–0.623***	–0.556***	–0.498*
	(0.132)	(0.178)	(0.287)
P2*ΔCHN	–0.693***	–0.402**	–0.541
	(0.148)	(0.169)	(0.426)
P3*ΔCHN	–0.459*	–0.386**	–0.492**
	(0.263)	(0.176)	(0.243)
Sector FE	Yes	Yes	Yes
Constant	0.306	0.041	0.348
	(0.190)	(0.191)	(0.278)
Observations	494	988	247
*R*2	0.639	0.592	0.585

*The dependent variable is the percentage change in the US import of 'parts and components' from Commonwealth countries. As shown in equation (2), all the three specifications include HS 4-digit fixed effects. Clustered standard errors are reported in parentheses: * p < 0.10, ** p < 0.05, *** p < 0.01.*

Observing the coefficients of the interaction terms, we can understand that the trade war has caused trade diversion effects (negative coefficients suggest an increase in Commonwealth exports when Chinese exports to the US decline). However, a significant trade diversion effect has not occurred in 2020Q1 for phase 2, suggesting the limited impact of the trade war on supply chain trade between the US and Commonwealth countries after the phase

1 trade agreement was signed. Considering the tariff dummy coefficients, it is clear that the trade war had no significant overall effect on the parts and components exports of Commonwealth countries to the US.[6]

3. COVID-19, Commonwealth states' supply chain trade and policy responses

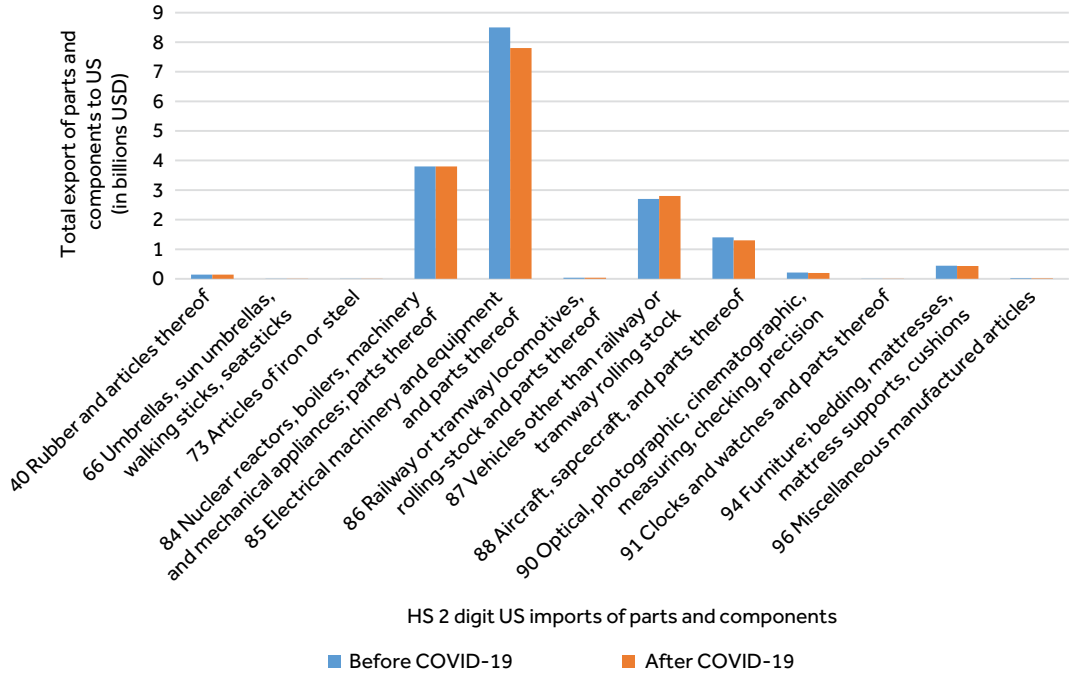
Here we explore how the evolution of trade within and with Commonwealth countries is affected by the pandemic. In particular, we present the import and export data for essential products such as medical supplies in the region. To this end, we use the latest trade data from the International Trade Centre (ITC). We also analyse the role of recent health-related trade policy changes in driving trade in Commonwealth countries after COVID-19. We use data from the Global Alert Database to track and map the COVID-19 related tariff and non-tariff changes that affect Commonwealth member countries' trade.

3.1 COVID-19 and supply chain trade

In addition to the US–China trade war, global supply chain trade is also significantly disrupted by the ongoing and unprecedented COVID-19 crisis. As a result, businesses are reconsidering their sourcing strategies. For example, US firms are increasingly inclined to reshoring or nearshoring (to Mexico) of supply chains – to increase resilience as well as decrease risks and costs from future crises (Patrick et al. 2020). Figure 14 presents the export of Commonwealth parts and components to the US before (2019Q4) and during (2020Q1) the unleashing of global supply chain crisis shocks owing to COVID-19.[7] As expected, the major intermediate exports of the Commonwealth countries (Chapters 85 and 88) declined in the first quarter of 2020.

Furthermore, we follow Magee (2008) and Frazer and Van Biesebroeck (2010) to specify a regression model to estimate the effect of the COVID-19 shock on Commonwealth countries' supply chain trade.

Figure 14. Commonwealth parts and components exports to the US before and after COVID-19 (2019Q4 and 2020Q1)



Source: Authors' calculation based on data from the International Trade Centre (ITC).

$$X_{ikt} = \beta_1 + \beta_2 Covid_t + \mu_{ik} + \theta_{it} + \gamma_{kt} + \varepsilon_i \quad (3)$$

Where, X_{ikt} is the export (import) of intermediate product k by Commonwealth country i at time t. $Covid_t$ is an indicator that denotes the presence of the COVID-19 shock. $Covid_t$ will be one after 1 January 2020, zero otherwise. μ_{ik}, θ_{it} and γ_{kt} are the country-product, country-year and product-year fixed effects that capture country-, product- and year-specific shocks (such as change in income, price, exchange rate, etc.). β_2 measures the supply chain trade impact of the COVID-19 shock.

Column (1) of Table 9 reports the impact of COVID-19 on the global parts and components exports of the 31 Commonwealth countries where export data are available. The COVID-19 coefficient indicates that relative to pre-COVID periods, exports of Commonwealth countries declined by 159 per cent.[8] However, this effect is overstated by the missing parts and components export data for 2020Q1 of the 25 member countries included in the analysis set out in Section 0. Therefore, in Column (2), we consider only the six countries (Canada, Mauritius, Mozambique, New Zealand, South Africa, and the UK) that have complete data in the sample period. The regression estimate shows that COVID-19 has reduced their parts and components exports by 75 per cent.

Column (3) of Table 9 reports the average impact of COVID-19 on the exports of all 54 Commonwealth countries. The coefficient is not statistically significant, suggesting the absence of COVID-19 disruption impacts on Commonwealth intermediate exports to the US in the first quarter of 2020. This finding makes sense, since the impact of the coronavirus in 2020Q1 was limited to China. In Column (4) we checked if the coronavirus outbreak had affected parts and components trade between China and Commonwealth countries. As expected, COVID-19 had reduced Commonwealth imports from China by about 17.1 per cent. Hence, estimation results show the devastating effect of the health shock on highly integrated global supply chain trade, implying the need to design appropriate coping strategies for similar future disasters.

3.2 COVID-19 trade policy responses

In this sub-section, we begin by presenting Commonwealth export and import of COVID-19 related medical supplies from 2015 to 2020. The World Customs Organization (WCO (2020) has classified COVID-19 products into

Table 9. COVID-19 impacts on Commonwealth parts and components trade

	(1)	(2)	(3)	(4)
	Total exports from 31 Commonwealth member countries	Total exports from 6 Commonwealth member countries	Commonwealth members' exports to the US	Chinese exports to all 54 Commonwealth countries
COVID-19	–1.594***	–0.751***	0.013	–0.171***
	(0.130)	(0.055)	(0.043)	(0.049)
Sector FE	Yes	Yes	Yes	Yes
Constant	9.911***	9.259***	8.127***	9.063***
	(0.006)	(0.003)	(0.002)	(0.002)
Observations	4940	4940	4940	4940
R2	***0.643***	***0.649***	***0.666***	***0.557***

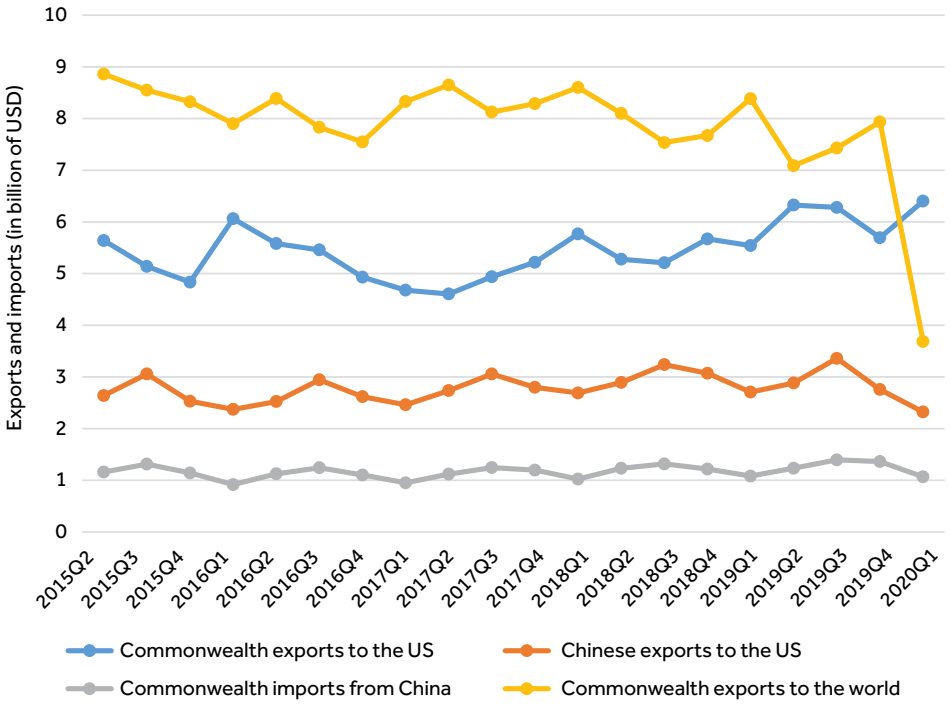
*The dependent variable is the log of total P&C exports of the 31 Commonwealth countries (Column 1), the log of total P&C exports of the 6 Commonwealth countries (Column 2), the log of US imports in P&C from Commonwealth countries (Column 3), and the log of total Chinese exports of P&C to Commonwealth countries (Column 4). Quarterly Commonwealth countries' export and import data for all products and for intermediate goods will be downloaded from the International Trade Centre (ITC) database. Tariffed and non-tariffed products will be identified based on Chinese tariff information from the USITC Tariff Database. As shown in equation (3), all the four specifications include HS 4-digit fixed effects. Clustered standard errors are reported in parentheses: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.*

six groups: (1) COVID-19 test kits; (2) protective garments and the like; (3) thermometers; (4) disinfectants/sterilisation products; (5) other medical devices; and (6) medical consumables. The list of COVID-19 related products for Commonwealth countries is presented in Table A8. After presenting the evolution of export and import, we discuss the key trade policy changes in Commonwealth countries following the COVID-19 outbreak.

Figure 15 shows the evolution of export and import of COVID-19 related medical supplies. While the overall evolution of Commonwealth export and import remains stable in the relatively normal years, the decline after 2019Q4 is striking. The yellow line, representing the aggregate COVID-19 related medical goods exports of the six countries for which we have current data — Canada, Mauritius, Mozambique, New Zealand, South Africa, and the UK — dropped significantly after 2019Q4. However, when we see the aggregate COVID-19 exports of all Commonwealth countries to the US (blue line), using mirror data, there is a slight rise in the first quarter of 2020. On the other hand, Chinese exports to the US and towards the Commonwealth countries started to fall during the last two quarters of the sample. This export decrease could be because of the introduction of export restricting measures by the Chinese government following the outbreak of the coronavirus disease in Wuhan or by the third phase of the trade war. Another useful point observed in Figure 15 is that the fall in Chinese exports of COVID-19 medical products to the US is replaced by Commonwealth exports to the US.

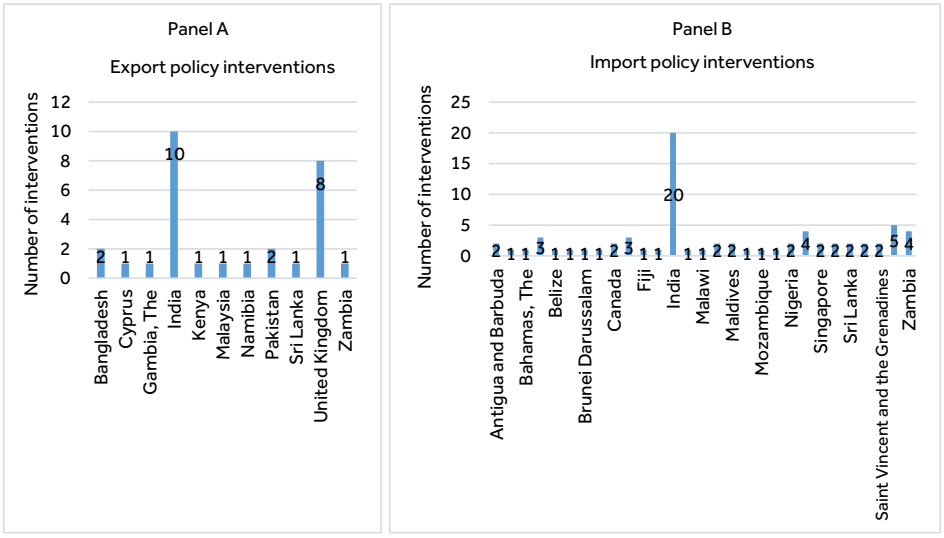
Figure 16 presents Commonwealth governments' trade restrictions adopted in 2020. Panel (A) shows export policy interventions applied by Commonwealth member country governments. According to EUI, GTA and World Bank (2020), export policy interventions include export bans, export licensing requirements, export quotas and export taxes. Among these export policy measures on COVID-19 related supplies, the majority are restrictive while a few are liberalising. As the figure illustrates, 11 Commonwealth countries have adopted export policy interventions. India made the biggest export policy changes (10) among Commonwealth countries, followed by the UK (8), Pakistan (2) and Bangladesh (2). Panel (B) reports the import policy interventions of the Commonwealth countries, comprising: import bans, import tariffs, import quotas, tariff rate quotas for imports, import licensing regimes, import monitoring regimes, customs-related trade facilitation measures and internal taxation of imports. Again,

Figure 15. Aggregate Commonwealth export and import of COVID-19 related medical supplies



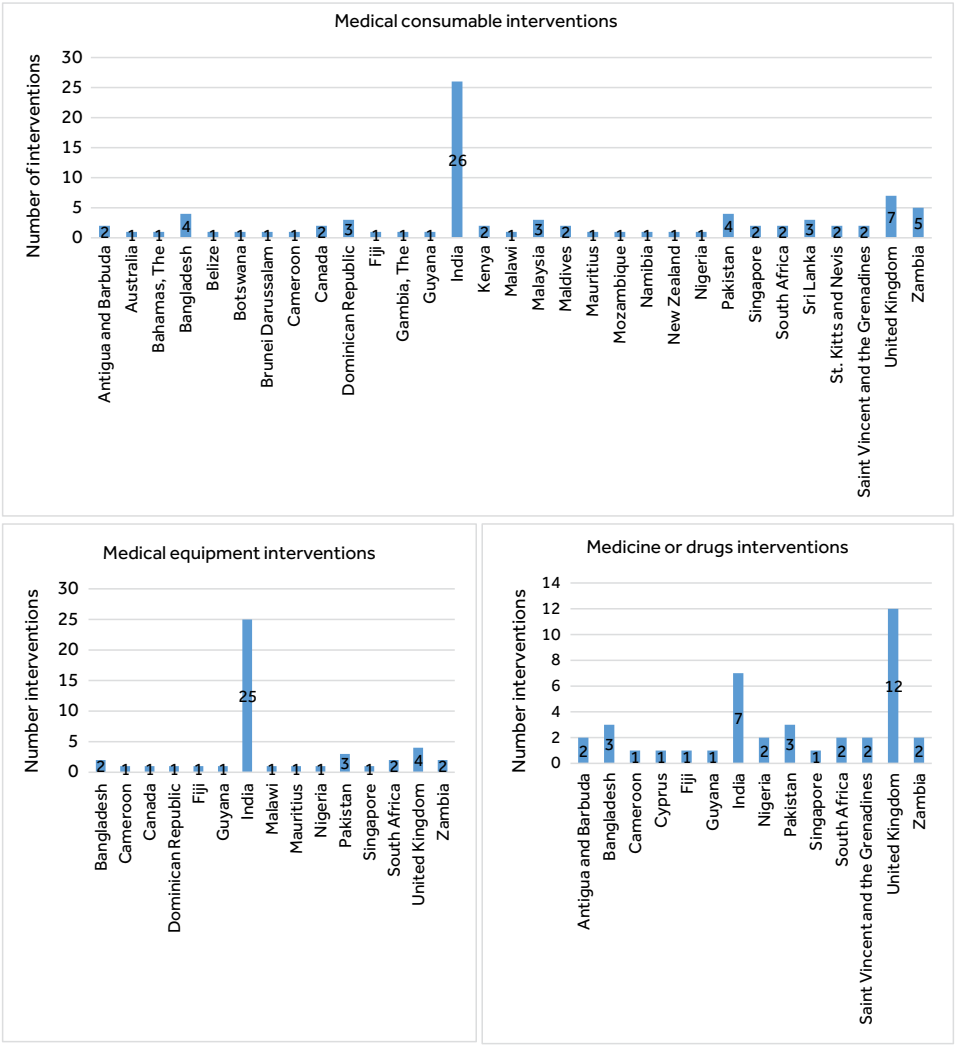
Source: Authors' calculation based on data from International Trade Centre (ITC).

Figure 16. Export and import policy interventions for COVID-19 related goods in Commonwealth countries since the beginning of 2020



Source: Authors' calculation based on data from EUI, GTA and World Bank (2020).

Figure 17. COVID-19 trade policy interventions in the medical products sector, Commonwealth countries



Source: Authors' calculation based on data from EUI, GTA and World Bank (2020).

the Indian government has conducted the largest set of import policy interventions among Commonwealth countries (20), followed by the UK (5), Zambia (4) and Pakistan (4). However, the majority of these import policy interventions are liberalising.

In Figure 17, we group medical products affected by export and import policy interventions. Medical consumables are medical supplies that, for example, include gloves, facemasks, protective garments, fit test kits, syringes and so on. As shown in the first panel of Figure 17, India made 26 policy interventions in the medical consumables sector. The UK (7), Zambia (5), Bangladesh (4) and Pakistan (4) ranked as the next four Commonwealth countries in terms of interventions in the medical consumable products trade. COVID-19 related medical equipment includes goods such as thermometers and pyrometers, flow-splitters (for oxygen supply), oxygen concentrators, x-ray tubes, oxygen therapy, aerosol therapy, and artificial respiration or other therapeutic respiration apparatus (EUI, GTA & World Bank 2020). Overall, 15 Commonwealth countries have applied at least one trade policy intervention on medical equipment products. India has applied 25 restrictive and liberalising interventions since the start of 2020. The final category of COVID-19 related products are medicines. Here, contrary to the above interventions, the UK has changed its trade policy in medicines 12 times, followed by India (7), Bangladesh (3) and Pakistan (3). In general, India, the UK, Bangladesh, Pakistan and Zambia have implemented the most trade policy interventions following the COVID-19 outbreak.

4. Conclusions

The two recent economic shocks could have a large effect in disrupting international trade for Commonwealth member countries. To this end, this study has explored three important questions: (1) What has been the impact of the US–China trade conflict on the Commonwealth countries' trade? (2) How has the trade war and the COVID-19 crisis impacted on Commonwealth members' supply chain trade? and (3) What have been the key trade policy measures taken following the outbreak of the COVID-19 pandemic? Using large HS six-digit trade (from the International Trade Center) and trade policy interventions data (from Global Trade Alert [GTA]), the paper provides the following key results:

- The empirical analysis indicates that Commonwealth export of products subject to US tariffs showed a significant increase between 2017Q1 and 2018Q3. Part of the reason for the observed export increase was the favourable economic environment in the US that bolstered domestic demand for foreign products. However, following the start of the US–China trade war, the growth of Commonwealth member countries' exports to the US sharply declined. The empirical analysis does not allow us to attribute the increase in Commonwealth exports to trade diversion, since the export of non-tariffed products also demonstrated a similar trend.
- When we look at the export plots of the different Commonwealth member regions, developed member countries (which include Australia, Canada, Cyprus, Malta, New Zealand and the United Kingdom) are by far the largest exporters to the US. We have also found that while the exports of the other regions remained stable over time, Asian Commonwealth members' exports grew slightly after the trade war.
- The empirical analysis also reveals the average quarterly export value of Chinese products, which are subject to phase 1 higher US tariffs, to the Commonwealth, has surged. However, this increase does not represent trade deflection, as the export of non-tariffed Chines products also increased after the trade war started.
- Our regression analysis shows that US imports from China and Commonwealth member countries are positively correlated in normal periods. However, the higher US tariffs on Chinese imports have increased trade diversion to Commonwealth countries. Interestingly, the estimates also indicate an increase in trade diversion over time favouring Commonwealth member countries' trade. Our regional-level regression analysis also

demonstrates that the observed average trade diversion impacts are mainly driven by developed Commonwealth members' exports.

- In addition to the overall trade effect, the trade war has also had a disruptive impact on supply chain trade. While our empirical analysis shows a modest change in the export of Commonwealth countries' parts and components, the regression result did not show any significant impact of the trade war on parts and components exports to the US. This implies the limited impact of the trade war in terms of intermediate inputs trade diversion.
- The ongoing COVID-19 pandemic has also disrupted supply chain trade, as economies have suffered from strict lockdowns. The unprecedented scale of the disruption has forced firms to reconsider reshoring and nearshoring strategies, to decrease risk and increase resilience. Our empirical analysis indicates that exports of the electronic machinery and equipment sector of Commonwealth members to the US registered the largest fall in 2020Q1 compared to its pre-crisis level (2019Q4). The estimated coefficient also illustrates that COVID-19 has reduced major Commonwealth member countries' parts and components exports to the world by about 75 per cent. The other key result of the regression is that Chinese export of parts and components to Commonwealth countries has declined by 17 per cent. These findings only show the impact of COVID-19 disruption on the first quarter of 2020. The impact is expected to increase relatively during the second quarter (and beyond), since many countries are increasingly affected by the virus outbreak.
- Finally, we have analysed the trade policy interventions of Commonwealth countries following the start of the COVID-19 epidemic. The graphs for the COVID-19 related medical supplies show a sharp decline in Commonwealth exports to the world and Commonwealth imports from China after January 2020. Among the Commonwealth member countries, India and the UK have applied the largest number of import and export policy interventions. For example, India has applied 25 interventions in COVID-19 medicalequipment and UK has implemented 12 interventions in medicine or COVID-19 related drugs.

Notes

1 The export values for all Commonwealth countries are reported in Figure in the Annexes.

2 The sectoral trade deflections for each Commonwealth member countries are reported in Figure A4.

3 The quarterly impacts of the US–China trade war for each Commonwealth region (using quarter-on-quarter differences) are reported in Table A2. to Table A6. in the Annexes.

4 The following SITC Revision 2 products are considered as parts and components: 7119, 71319, 71331, 71332, 7139, 7149, 7169, 71889, 72119, 72129, 72139, 72198, 72199, 7239, 72449, 72469, 72479, 7259, 72689, 7269, 72719, 72729, 72819, 72839, 72849, 7369, 73719, 73729, 74149, 7429, 7439, 74419, 7449, 74519, 74523, 74999, 759, 764, 77129, 772, 77579, 77589, 77689, 77819, 77829, 77889, 784, 78539, 78689, 79199, 7929, 82119, 82199, 87429, 88119, 88121, 88129, 88411, 88529, 89949.

5 Including electrical machinery and equipment and parts thereof, sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of such articles.

6 The effect of the trade war on Commonwealth parts and components exports for each quarter (using quarter-on-quarter difference) is reported in Table A1. of the appendix.

7 For this analysis, we use mirror data (i.e. US import of parts and components from Commonwealth countries to Commonwealth export of parts and components to the US). Hence, we have parts and components data for 54 countries.

8 To get the impact in percentage, we multiplied the coefficient (β_2) by 100 per cent.

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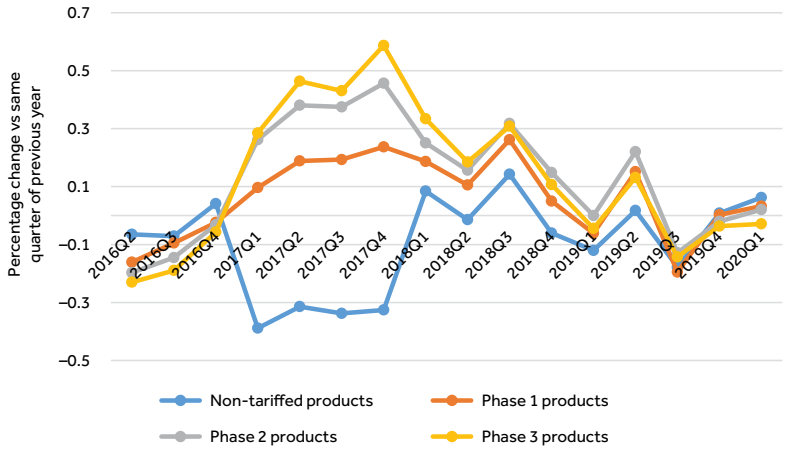
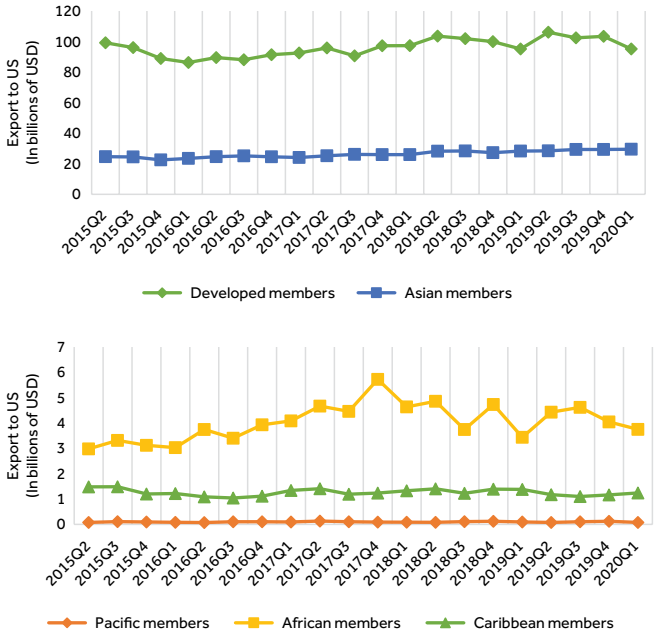
Annex 1. The US–China trade war and aggregate Commonwealth exports to the US: graphical analysis

Figure A1. Percentage changes in the value of Commonwealth countries' exports to the US



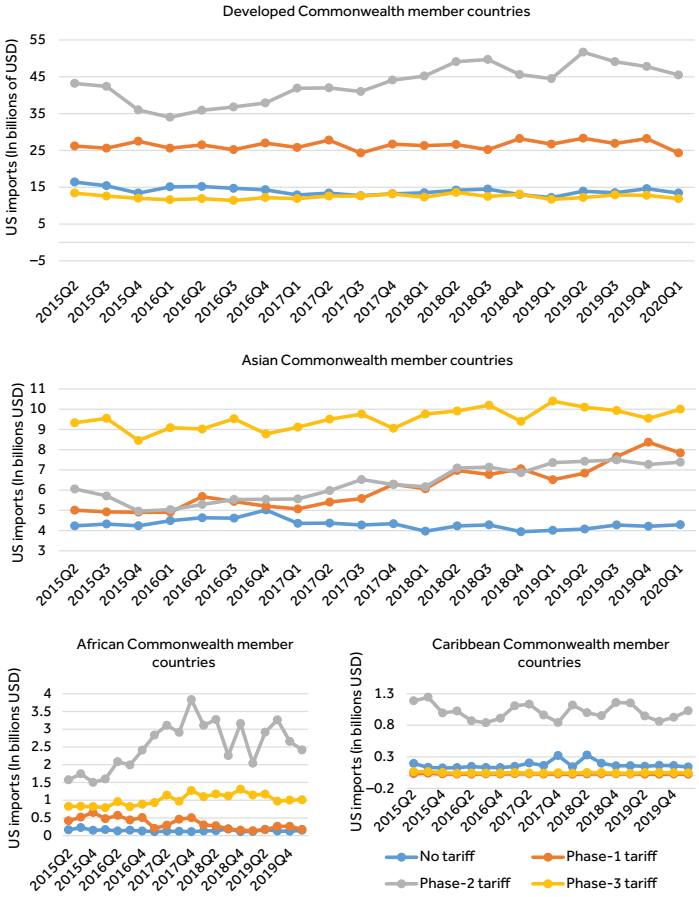
Source: Authors' calculation based on data from the International Trade Centre (ITC).

Figure A2. Exports of Commonwealth country groups to the US (2015Q2–2020Q1)



Source: Authors' calculation based on data from the International Trade Centre (ITC).

Figure A3. Different exports of Commonwealth country groups to the US (2015Q2–2020Q1)



Source: Authors' calculation based on data from the International Trade Centre (ITC).

Figure A4. Trade deflection of Chinese exports across sectors for each Commonwealth region

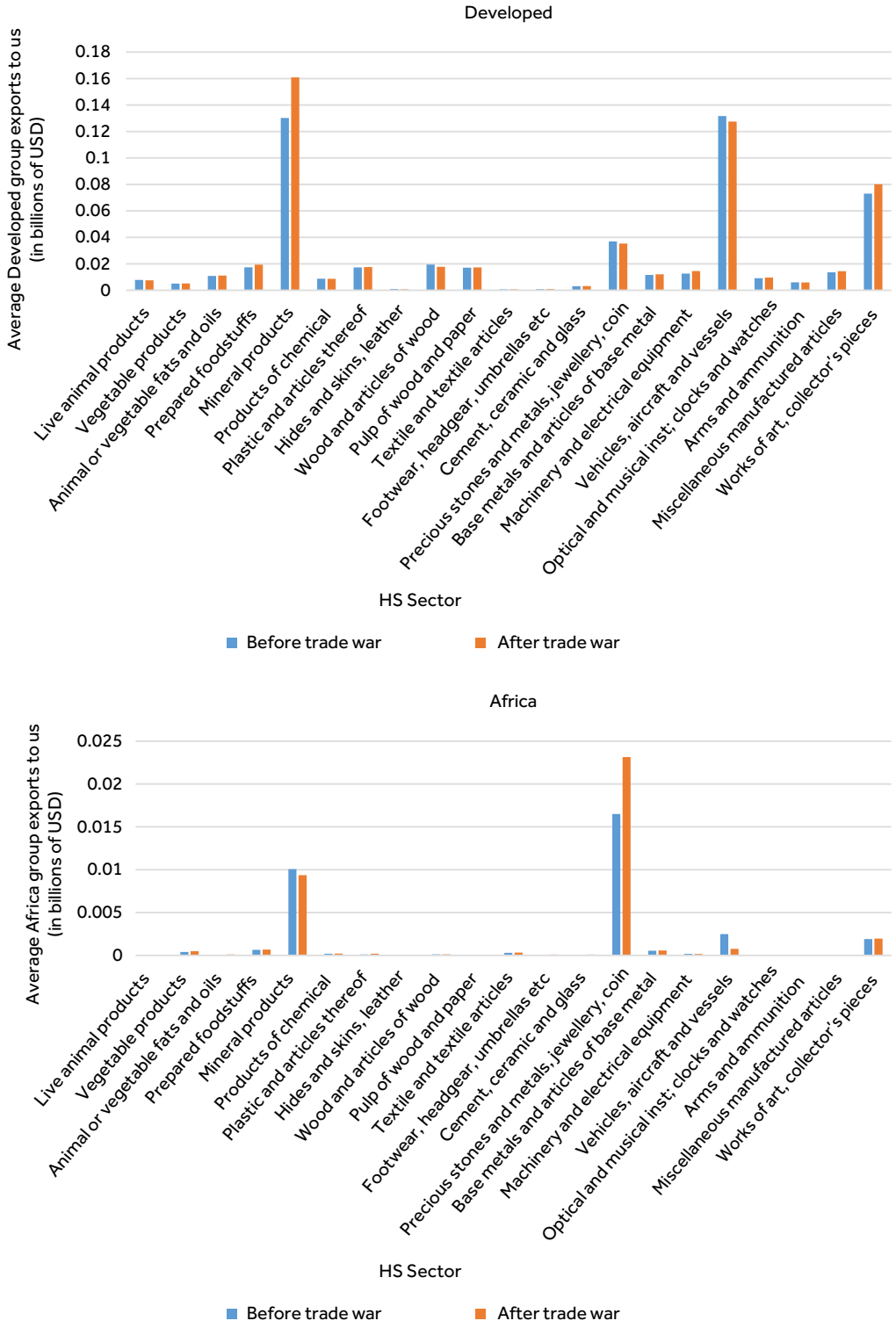


Figure A4. *Continued*

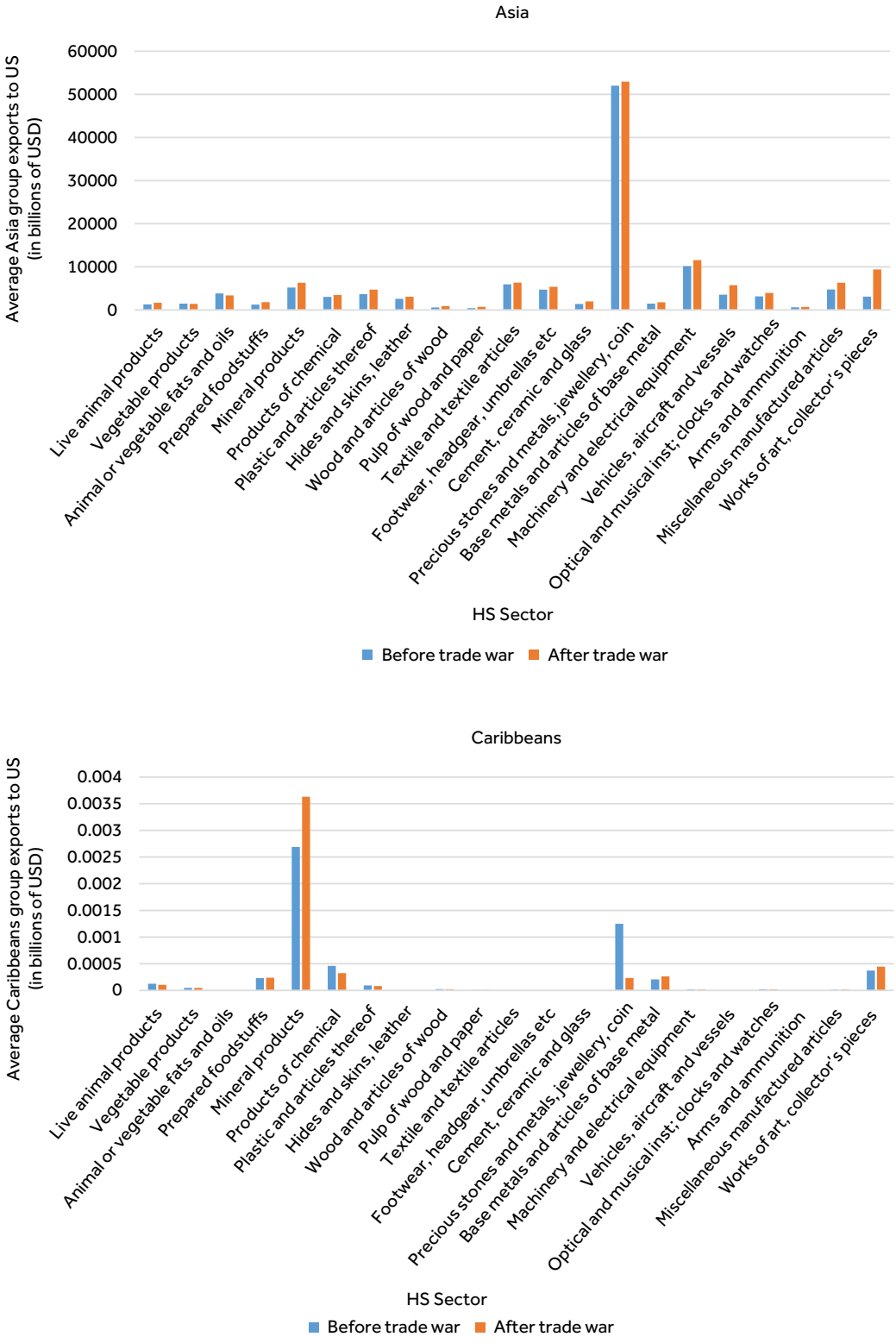
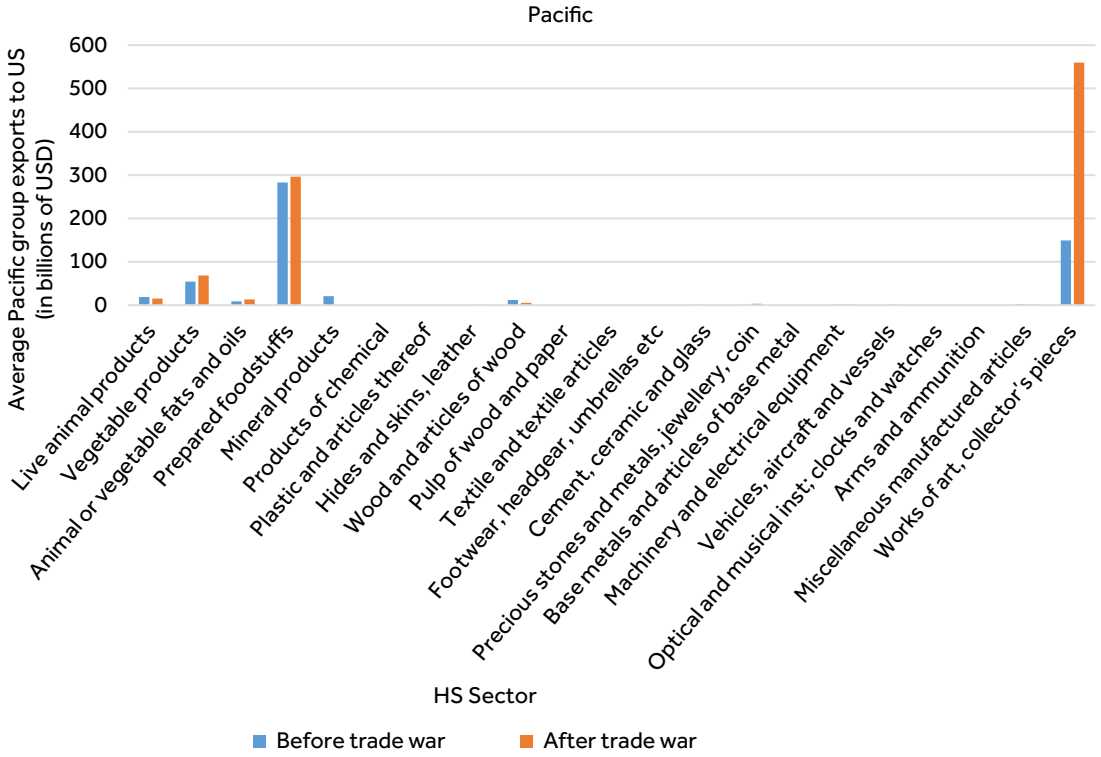


Figure A4. *Continued*



Annex 2. The US–China trade war and aggregate Commonwealth exports to the US: regression analysis with quarter-to-quarter differences

Following Nicita (2019), we estimated the following regression equation to quantify the impact of the US tariffs (on Chinese products) on Commonwealth countries exports:

$$\begin{aligned}\Delta X_{it} = {} & \beta_1 + \beta_2 \Delta C_{it} + \beta_3 T_{it}^1 + \beta_4 T_{it}^2 \\ & + \beta_5 T_{it}^3 + \beta_6 T_{it}^1 {}^{\star} \Delta C_{it} + \beta_7 T_{it}^2 {}^{\star} \Delta C_{it} \\ & + \beta_8 T_{it}^3 {}^{\star} \Delta C_{it} + \mu_z + \theta_t + \varepsilon_i \end{aligned} \quad (1)$$

Where, ΔX_i is the change in Commonwealth countries' exports to the US, and ΔC_{it} is a control that represents US imports of China's goods. T_i^1, T_i^2 and T_i^3 are dummy variables that are equal to one if product i is subject to US tariffs on China, either in phase 1 (which became effective on 6 July and 23 August 2018), phase 2 (which became effective on 24 September 2018) or phase 3 (which became effective on 1 September 2019). β_2 captures the correlation of US imports from China and US imports from Commonwealth countries in the absence of tariffs. μ_z is the product fixed effect and ε_i is the error term. β_3, β_4 and β_5 capture the overall effect of the trade war on Commonwealth countries' exports to the US. The coefficient of the interaction term represents the trade diversion effect on goods subject to the US tariffs. In other words, the coefficient of the interaction term isolates the trade diversion effects of US tariffs (on Chinese goods) on Commonwealth exports. In other words, β_6, β_7 and β_8 denote the trade diversion impact, which measures the replacement of Chinese goods that are subject to US tariffs by the exports of Commonwealth countries. If the latter coefficients are negative, then Chinese exports to the US are negatively

Table A1. The effect of the US–China trade war on US imports from Commonwealth countries

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Q3 2018	Q4 2018	Q1 2019	Q2 2019	Q3 2019	Q4 2019	Q1 2020
Percentage Δ in	–0.007	0.302	0.407*	0.432**	0.304	0.018	0.082
Import from china	(0.104)	(0.185)	(0.220)	(0.216)	(0.216)	(0.067)	(0.072)
Phase 1 tariffs	–0.022	0.253	0.489**	0.160	0.373*	–0.054	–0.280*
	(0.105)	(0.218)	(0.221)	(0.208)	(0.205)	(0.129)	(0.169)
Phase 2 tariffs	–0.059	0.344	0.475**	0.135	0.395*	–0.055	–0.073
	(0.107)	(0.238)	(0.219)	(0.224)	(0.236)	(0.104)	(0.109)
Phase 3 tariffs	0.041	0.218	0.298*	–0.068	0.127	–0.037	–0.188
	(0.098)	(0.176)	(0.153)	(0.148)	(0.167)	(0.113)	(0.117)
P1*ΔCHN	0.019	–0.310	–0.400*	–0.485**	–0.303	–0.018	–0.116
	(0.117)	(0.194)	(0.229)	(0.228)	(0.237)	(0.084)	(0.112)
P2*ΔCHN	0.013	–0.172	–0.290	–0.344**	–0.219	–0.011	–0.044
	(0.112)	(0.138)	(0.176)	(0.167)	(0.165)	(0.071)	(0.078)
P3*ΔCHN	0.049	–0.284	–0.440*	–0.480**	–0.202	–0.009	–0.084
	(0.116)	(0.192)	(0.226)	(0.217)	(0.219)	(0.085)	(0.089)
Sector FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	–0.241***	–1.731***	–1.137***	–0.718***	–1.065***	–0.129	0.867***
	(0.090)	(0.184)	(0.165)	(0.179)	(0.191)	(0.098)	(0.105)
Observations	5466	5466	5466	5466	5466	5466	5466
$R2$	0.250	0.251	0.249	0.265	0.248	0.256	0.227

*The dependent variable is the percentage change in US imports from the Commonwealth countries. As show in equation (1), all the seven specifications include HS 4-digit fixed effects. Clustered standard errors are reported in parentheses: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.*

associated with Commonwealth exports to the US, which indicates the presence of trade diversion.

Table A1. presents the regression result for the impact of the US–China trade war on Commonwealth exports to the US. Columns (1) through (8) present the effect of the tariff increase from the second quarter of 2018 (where the US started imposing tariffs on US$48 billion worth of US steel and aluminium imports from several countries) to the first quarter of 2020 (where the phase 1 trade deal went into effect). The positive and statistically significant coefficient of the change in US imports from China in the first and second quarters of 2019 indicates that China's and Commonwealth countries' exports to the US are positively correlated in normal times. This is expected, since the US generally increases its imports from China and elsewhere if the economic climate largely improves.

Considering the overall impact of US tariff increases on Chinese products on Commonwealth exports, phase 1 and phase 2 tariffs significantly and positively increased Commonwealth exports to the US in the first and third quarters of 2019. Similarly, phase 3 US tariff hikes on Chinese products led to a significant increase in Commonwealth countries' exports to the US in the first quarter of 2019. Phase 2 and phase 3 tariff changes caused higher Commonwealth exports to the US before they came into effect. This may be due to stockpiling of imports that are sourced from Commonwealth countries before the tariffs were imposed on Chinese products. US companies may have increase imports from Commonwealth countries, assuming the US might expand its tariff war to other countries.

The coefficients of the interaction terms present the trade diversion impact of the US–China trade conflict. Phase 1 and phase 3 US tariffs on imports from China resulted in trade diversion to Commonwealth countries. Similarly, all phases of US tariffs on Chinese imports resulted in significant trade diversion effects in 2019Q2. For instance, the magnitude of the phase 1

impact in 2019Q1 and 2019Q2 was 40 cents per dollar and 49 cents per dollar, respectively.

All the statistically significant coefficients demonstrate that the trade diversion effect in favour of Commonwealth member countries increased over time. Thus, the substitution effect of US imports from China with imports from Commonwealth countries has increased over time. Furthermore, the estimates show that phase 1 and phase 3 tariff changes have resulted in larger trade diversion effects than phase 2 tariff changes. Nicita (2019) also finds that US tariffs against China reduced imports from China by about 25 per cent. The reduction in the import of tariffed Chinese products led to trade diversion in favour of mainly Mexico, Taiwan, the EU and Vietnam. The study indicates Commonwealth countries such as India and Canada benefited by between US$0.9 and US$1.5 billion. Somesub-Saharan and South East Asian Commonwealth members also benefited from the trade diversion effects (Nicita 2019).

Annex 3. The effect of the US–China trade war on each Commonwealth member group's exports to the US: regression analysis with quarter-to-quarter differences

Which Commonwealth member regions benefited from the identified trade diversion effects? We quantified the impact of the US–China trade war on Commonwealth country groups by re-estimating equation (1) for the five groups. Table A2 to Table A6. present the estimated results. Like Table A1., each column reports the estimated direct and trade diversion impact of the US tariff hikes on Chinese products for Commonwealth groups' exports to the US. Sector-level fixed effects that capture the specific changes in each sector (such as demand changes for commodities) are controlled in all regression specifications.

As shown in the first row of Table A2. Chinese exports and developed Commonwealth member countries' exports to the US are positively correlated, implying that a favourable economic condition in the US may lead to an upsurge in US imports from both China and developed Commonwealth members in normal times. The coefficient estimates of the three interaction terms in Table A2, reveal that US tariffs on Chinese imports resulted in trade diversion in favour of developed Commonwealth member countries in 2018Q4, 2019Q1 and 2019Q2. Interestingly, the trade diversion effect also generally increased over time, indicating a potential replacement of more costly Chinese imports by developed Commonwealth member country exports. There may also be a potential trade diversion effect after 2019Q1. However, we have not seen the most recent quarters, since each consecutive quarter is compared with the previous year's quarter, which was also subject to the trade war period.

Table A3. presents the effect of the US–China trade war on the 19 African Commonwealth member countries. The trade diversion effect is observed in the first and the second quarters of 2019, resulting from the phase 1 tariff increase. While phase 2 tariff changes did not result in trade diversion effects in favour of African members, phase 3 led to trade diversion effects in 2018Q4. In contrast, Table A4. and Table A5. show that the US tariffs on Chinese imports did not result in significant trade diversion benefits to Asian and Caribbean Commonwealth member countries, suggesting the result observed in Table A1. is driven mainly by developed and African Commonwealth member countries. Table A6. also illustrates that China's import losses in 2019Q2, owing to phase 1 tariffs, were partly replaced by imports originating from Pacific island Commonwealth countries. In general, the regression estimates conclude that costly Chineseimports are mainly replaced by relatively cheaper imports from developed and African Commonwealth member countries.

Table A2. A2 US–China trade war impacts on US imports from developed Commonwealth member countries

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Q3 2018	Q4 2018	Q1 2019	Q2 2019	Q3 2019	Q4 2019	Q1 2020
Percentage Δ in Import from china	–0.005 (0.079)	0.357** (0.166)	0.421* (0.215)	0.388* (0.218)	0.296 (0.206)	–0.096 (0.063)	0.072 (0.088)
Phase 1 tariffs	0.107 (0.131)	0.363* (0.214)	0.454** (0.204)	0.186 (0.210)	0.289 (0.216)	–0.135 (0.142)	–0.243 (0.160)
Phase 2 tariffs	0.041 (0.111)	0.439* (0.225)	0.346 (0.219)	0.173 (0.217)	0.281 (0.242)	–0.123 (0.107)	0.018 (0.109)
Phase 3 tariffs	–0.003 (0.108)	0.208 (0.173)	0.188 (0.151)	–0.042 (0.154)	0.213 (0.164)	–0.056 (0.118)	–0.075 (0.114)
P1*ΔCHN	0.013 (0.096)	–0.386** (0.177)	–0.416* (0.223)	–0.443* (0.231)	–0.339 (0.221)	0.081 (0.090)	–0.072 (0.109)
P2*ΔCHN	0.021 (0.085)	–0.247** (0.114)	–0.356** (0.166)	–0.303* (0.167)	–0.215 (0.148)	0.090 (0.067)	–0.042 (0.092)
P3*ΔCHN	0.021 (0.093)	–0.333* (0.174)	–0.505** (0.220)	–0.393* (0.223)	–0.252 (0.207)	0.094 (0.079)	–0.080 (0.098)
Sector FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	–0.269*** (0.098)	–1.785*** (0.173)	–1.042*** (0.160)	–0.750*** (0.177)	–1.050*** (0.194)	–0.085 (0.102)	0.762*** (0.101)
Observations	5466	5466	5466	5466	5466	5466	5466
$R2$	0.243	0.281	0.274	0.270	0.262	0.279	0.248

*The dependent variable is the percentage change in US imports from developed Commonwealth countries. As shown in equation (1), all the seven specifications include HS 4-digit fixed effects. Clustered standard errors are reported in parentheses: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.*

Table A3. US–China trade war impacts on US imports from African Commonwealth member countries

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Q3 2018	Q4 2018	Q1 2019	Q2 2019	Q3 2019	Q4 2019	Q1 2020
Percentage Δ in Import from china	0.025 (0.085)	0.083 (0.067)	0.071 (0.070)	0.087* (0.052)	–0.014 (0.081)	–0.003 (0.069)	0.062 (0.045)
Phase 1 tariffs	–0.020 (0.176)	–0.002 (0.160)	0.110 (0.215)	–0.257 (0.173)	–0.058 (0.165)	0.040 (0.168)	–0.243 (0.161)
Phase 2 tariffs	0.130 (0.105)	–0.062 (0.099)	–0.090 (0.121)	–0.149 (0.121)	–0.070 (0.117)	–0.121 (0.103)	–0.033 (0.089)
Phase 3 tariffs	0.041 (0.118)	0.195* (0.117)	0.080 (0.130)	–0.049 (0.130)	–0.111 (0.116)	–0.270** (0.117)	–0.121 (0.096)
P1*ΔCHN	–0.035 (0.092)	–0.060 (0.089)	–0.149* (0.082)	–0.112* (0.060)	–0.027 (0.084)	0.015 (0.072)	–0.130 (0.089)
P2*ΔCHN	–0.034 (0.088)	–0.067 (0.064)	–0.044 (0.073)	–0.068 (0.059)	0.011 (0.085)	0.002 (0.068)	–0.050 (0.050)
P3*ΔCHN	0.002 (0.103)	–0.150* (0.084)	–0.063 (0.080)	–0.108 (0.066)	0.039 (0.096)	–0.051 (0.077)	–0.053 (0.054)
Sector FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	–0.086 (0.098)	–0.056 (0.091)	0.024 (0.113)	0.099 (0.111)	0.091 (0.104)	0.196** (0.094)	0.080 (0.079)
Observations	5466	5466	5466	5466	5466	5466	5466
$R2$	0.262	0.249	0.248	0.272	0.262	0.269	0.261

*The dependent variable is the percentage change in US imports from African Commonwealth member countries. As shown in equation (1), all the seven specifications include HS 4-digit fixed effects. Clustered standard errors are reported in parentheses: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.*

Table A4. US–China trade war impacts on US imports from Asian Commonwealth member countries

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Q3 2018	Q4 2018	Q1 2019	Q2 2019	Q3 2019	Q4 2019	Q1 2020
Percentage Δ in	0.059	0.062	0.098	0.110	0.119	0.042	0.019
Import from china	(0.099)	(0.141)	(0.156)	(0.128)	(0.122)	(0.054)	(0.062)
Phase 1 tariffs	–0.146	–0.270	0.264	0.141	–0.063	0.062	–0.169
	(0.186)	(0.186)	(0.192)	(0.167)	(0.179)	(0.181)	(0.154)
Phase 2 tariffs	–0.001	0.003	0.178	–0.040	–0.021	–0.013	–0.036
	(0.104)	(0.134)	(0.130)	(0.133)	(0.127)	(0.132)	(0.098)
Phase 3 tariffs	–0.149	–0.030	0.098	–0.048	–0.112	–0.066	–0.160
	(0.123)	(0.127)	(0.134)	(0.126)	(0.122)	(0.136)	(0.103)
P1*ΔCHN	0.001	–0.121	–0.069	–0.052	–0.011	–0.048	–0.003
	(0.111)	(0.154)	(0.169)	(0.135)	(0.151)	(0.085)	(0.119)
P2*ΔCHN	–0.028	0.011	–0.039	–0.068	–0.108	–0.073	0.037
	(0.109)	(0.134)	(0.146)	(0.122)	(0.108)	(0.061)	(0.067)
P3*ΔCHN	0.005	–0.072	–0.087	–0.171	–0.085	0.001	0.085
	(0.117)	(0.156)	(0.179)	(0.144)	(0.136)	(0.084)	(0.102)
Sector FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.006	0.679***	0.186	–0.391***	–0.706***	–0.582***	0.503***
	(0.098)	(0.118)	(0.119)	(0.117)	(0.107)	(0.118)	(0.088)
Observations	5466	5466	5466	5466	5466	5466	5466
$R2$	0.281	0.265	0.265	0.285	0.266	0.250	0.263

*The dependent variable is the percentage change in US imports from Asian Commonwealth member countries. As shown in equation (1), all the seven specifications include HS 4-digit fixed effects. Clustered standard errors are reported in parentheses: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.*

Table A5. US–China trade war impacts on US imports from Caribbean Commonwealth member countries

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Q3 2018	Q4 2018	Q1 2019	Q2 2019	Q3 2019	Q4 2019	Q1 2020
Percentage Δ in	–0.004	0.001	–0.004	0.015	0.033	0.003	–0.004
Import from china	(0.005)	(0.005)	(0.009)	(0.012)	(0.030)	(0.012)	(0.012)
Phase 1 tariffs	0.063	0.076	–0.002	0.125	0.060	0.100	0.026
	(0.113)	(0.111)	(0.097)	(0.115)	(0.095)	(0.078)	(0.110)
Phase 2 tariffs	–0.032	–0.020	0.009	–0.033	–0.032	–0.008	0.028
	(0.062)	(0.057)	(0.046)	(0.052)	(0.059)	(0.053)	(0.053)
Phase 3 tariffs	–0.021	0.017	0.057	–0.034	–0.095	–0.009	0.009
	(0.057)	(0.070)	(0.057)	(0.057)	(0.063)	(0.066)	(0.069)
P1*ΔCHN	–0.016	0.008	0.044	0.002	–0.035	–0.005	–0.013
	(0.015)	(0.015)	(0.034)	(0.023)	(0.033)	(0.016)	(0.025)
P2*ΔCHN	0.014	–0.011	0.007	–0.005	–0.018	–0.007	0.021
	(0.015)	(0.014)	(0.015)	(0.017)	(0.035)	(0.016)	(0.020)
P3*ΔCHN	0.011	–0.024	–0.038	0.035	–0.035	–0.012	0.008
	(0.014)	(0.016)	(0.028)	(0.023)	(0.035)	(0.022)	(0.023)
Sector FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.027	–0.005	–0.016	0.034	0.063	0.008	–0.017
	(0.052)	(0.053)	(0.043)	(0.042)	(0.043)	(0.052)	(0.050)
Observations	5466	5466	5466	5466	5466	5466	5466
$R2$	0.250	0.273	0.278	0.222	0.242	0.277	0.253

*The dependent variable is the percentage change in US imports from Caribbean Commonwealth member countries. As shown in equation (1), all the seven specifications include HS 4-digit fixed effects. Clustered standard errors are reported in parentheses: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.*

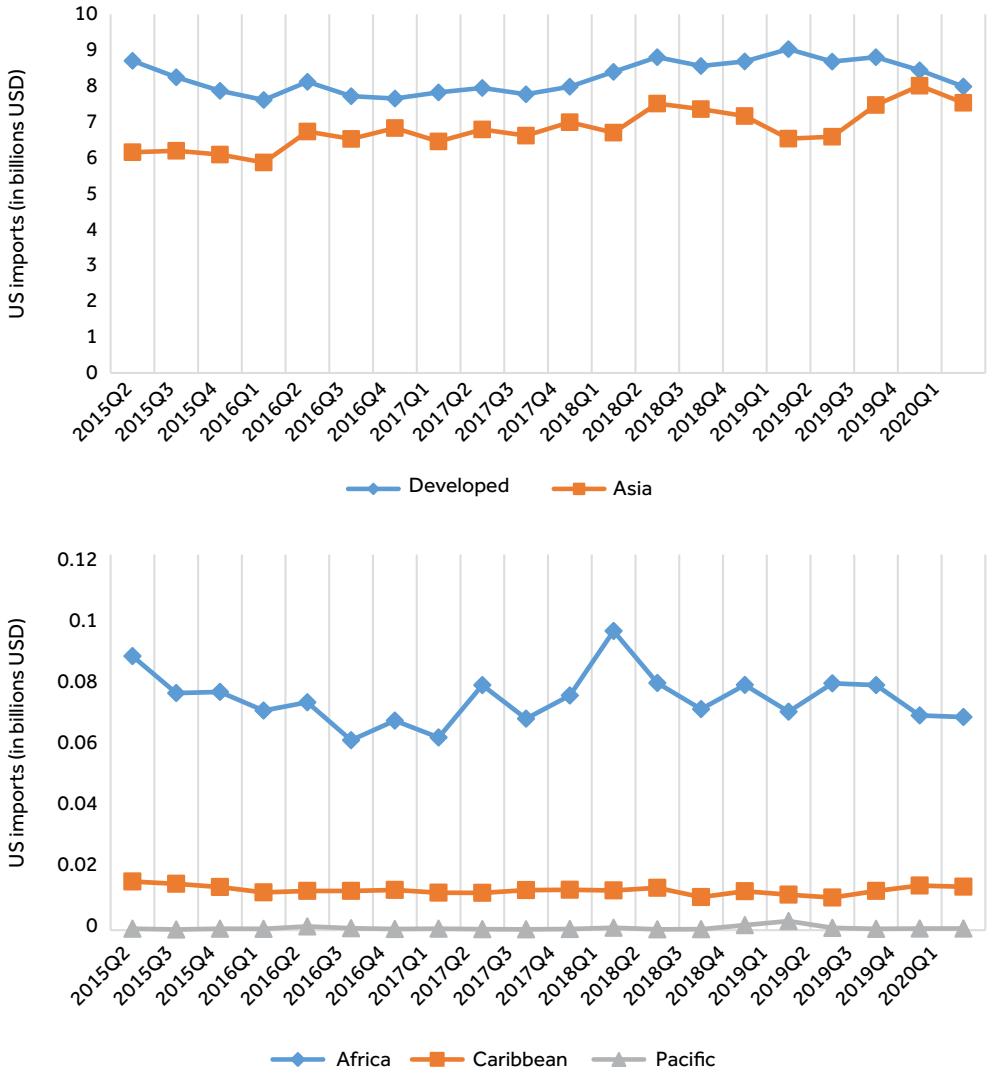
Table A6. US–China trade war impacts on US imports from Pacific Commonwealth member countries

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Q3 2018	Q4 2018	Q1 2019	Q2 2019	Q3 2019	Q4 2019	Q1 2020
Percentage Δ in	–0.010	–0.002	–0.001	0.003	–0.004	0.002	–0.001
Import from china	(0.007)	(0.005)	(0.003)	(0.006)	(0.005)	(0.004)	(0.002)
Phase 1 tariffs	0.129*	–0.109	–0.138*	–0.026	–0.061	0.012	–0.013
	(0.074)	(0.088)	(0.071)	(0.081)	(0.074)	(0.080)	(0.082)
Phase 2 tariffs	0.042	0.001	–0.006	0.028	–0.036	0.006	–0.038
	(0.042)	(0.035)	(0.034)	(0.051)	(0.046)	(0.046)	(0.034)
Phase 3 tariffs	0.000	0.001	0.007	0.079	0.021	0.006	–0.001
	(0.062)	(0.038)	(0.053)	(0.059)	(0.051)	(0.042)	(0.042)
P1*ΔCHN	0.013	0.005	0.004	–0.017*	0.002	–0.003	–0.004
	(0.010)	(0.012)	(0.011)	(0.009)	(0.007)	(0.006)	(0.009)
P2*ΔCHN	0.006	0.005	0.002	–0.012	0.005	0.000	0.006
	(0.009)	(0.008)	(0.006)	(0.011)	(0.006)	(0.006)	(0.005)
P3*ΔCHN	0.004	–0.009	–0.001	–0.007	0.002	–0.002	–0.000
	(0.015)	(0.010)	(0.009)	(0.010)	(0.007)	(0.010)	(0.008)
Sector FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	–0.021	0.001	0.001	–0.054	0.007	–0.006	0.019
	(0.048)	(0.030)	(0.040)	(0.049)	(0.044)	(0.039)	(0.033)
Observations	5466	5466	5466	5466	5466	5466	5466
$R2$	0.297	0.265	0.237	0.293	0.319	0.295	0.287

*The dependent variable is the percentage change in US imports from African Commonwealth member countries. As shown in equation (1), all the seven specifications include HS 4-digit fixed effects. Clustered standard errors are reported in parentheses: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.*

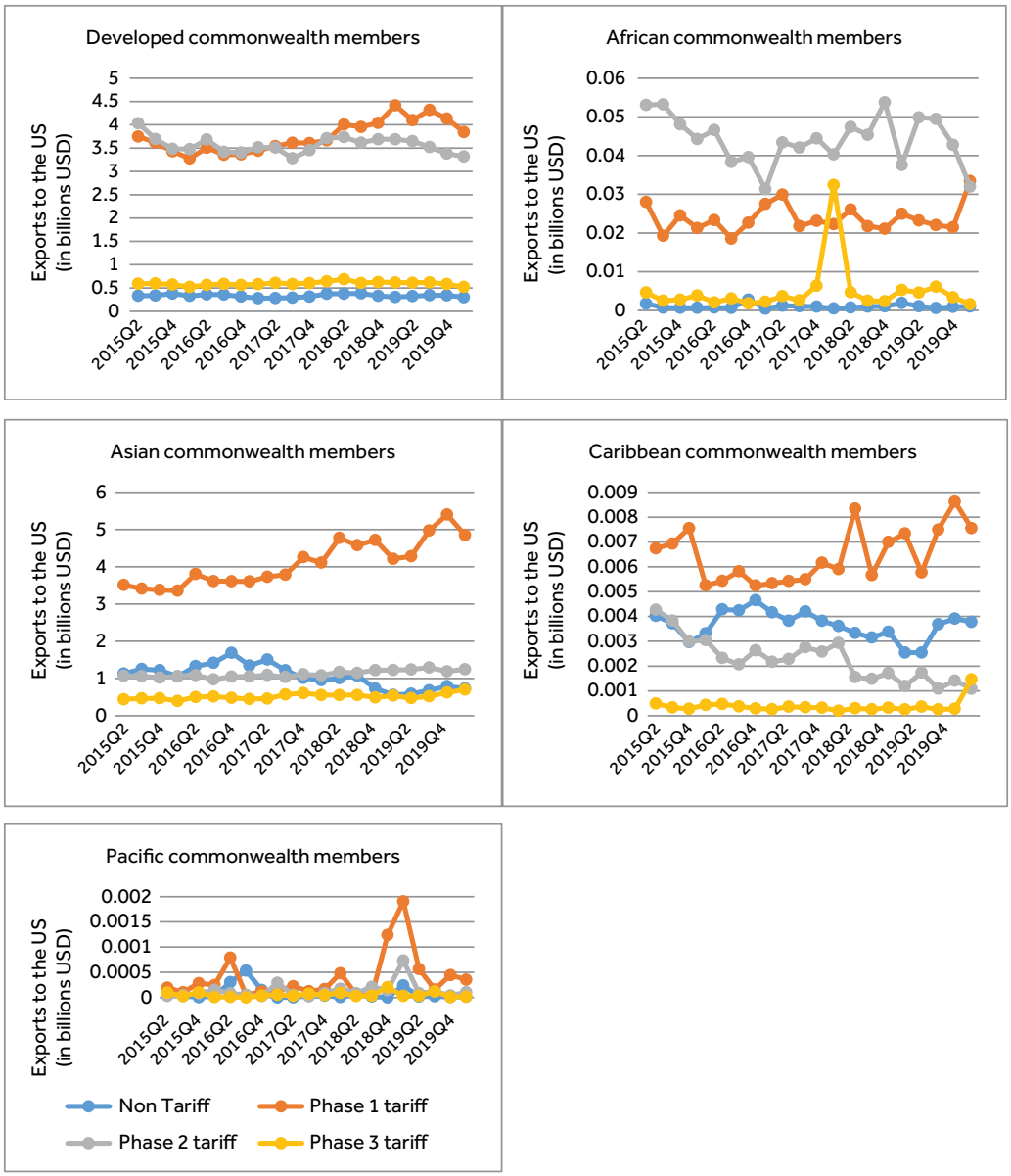
Annex 4. The US–China trade war and Commonwealth supply chain trade to the US: graphical analysis

Figure A5. Commonwealth member country groups' parts and components export to the US



Source: Authors' calculation based on data from International Trade Centre (ITC).

Figure A6. Parts and components export to the US by different Commonwealth country groups



Source: Authors' calculation based on data from International Trade Centre (ITC).

Annex 5. The US–China trade war and Commonwealth supply chain trade to the US: regression analysis with quarter-to-quarter differences

Table A7. US–China trade war impacts on Commonwealth countries' parts and components export to the US

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Q2 2018	Q3 2018	Q4 2018	Q1 2019	Q2 2019	Q3 2019	Q4 2019	Q1 2020
Percentage Δ in	0.221*	–0.109	0.255	0.879	0.191	0.242*	0.031	–0.173
Import from china	(0.128)	(0.172)	(0.650)	(0.940)	(0.134)	(0.141)	(0.053)	(0.153)
Phase 1 tariffs	0.003	–0.150	–0.115	0.342	0.032	0.325	–0.244	–0.190
	(0.282)	(0.265)	(0.387)	(0.390)	(0.227)	(0.294)	(0.216)	(0.383)
Phase 2 tariffs	–0.137	–0.102	–0.082	0.073	–0.097	0.108	–0.078	–0.121
	(0.241)	(0.180)	(0.362)	(0.276)	(0.208)	(0.229)	(0.333)	(0.327)
Phase 3 tariffs	0.004	–0.006	–0.281	–0.054	–0.248	0.005	–0.104	–0.020
	(0.215)	(0.263)	(0.431)	(0.369)	(0.278)	(0.209)	(0.301)	(0.444)
P1*ΔCHN	–0.171	0.234	–0.188	–0.412	–0.147	0.160	–0.066	–0.252
	(0.145)	(0.195)	(0.638)	(0.985)	(0.132)	(0.492)	(0.118)	(0.523)
P2*ΔCHN	0.218	0.277	0.201	–0.677	–0.358	–0.312	0.307	0.110
	(0.176)	(0.198)	(0.731)	(0.914)	(0.396)	(0.327)	(0.500)	(0.333)
P3*ΔCHN	–0.417**	0.209	–0.087	–1.020	0.056	–0.157	0.177	–0.019
	(0.192)	(0.145)	(0.652)	(1.102)	(0.196)	(0.258)	(0.328)	(0.250)
Sector FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.310	0.222	0.654**	0.071	0.472***	0.028	–0.326	0.171
	(0.189)	(0.139)	(0.308)	(0.232)	(0.162)	(0.170)	(0.202)	(0.282)
Observations	247	247	247	247	247	247	247	247
$R2$	0.579	0.718	0.639	0.412	0.536	0.408	0.288	0.399

*The dependent variable is the percentage change in US imports of parts and components from Commonwealth countries. As shown in in equation (2), all the eight specifications include HS 4-digit fixed effects. Clustered standard errors are reported in parentheses: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.*

Table A8. COVID-19 related medical products (HS 6-digit classification)

Product name	HS Code
Articles of apparel and clothing accessories produced by the stitching or sticking together	392620
Breathing appliances and gas masks (excluding protective masks having neither mechanical parts	902000
Computer tomography apparatus	902212
Diagnostic or laboratory reagents on a backing, prepared diagnostic or laboratory reagents	382200
Disinfectants (excluding goods of subheading 3808.50)	380894
Electro-diagnostic apparatus, incl. apparatus for functional exploratory examination	901819
Ethyl alcohol of an alcoholic strength of <80% vol, not denatured; spirits and other spirituous	220890
Garments made up of felt or nonwovens, coated, covered or laminated	621010
Garments of the type described in subheading 6201,11 to 6201,19, rubberised or impregnated	621020
Garments of the type described in subheading 6202,11 to 6202,19, rubberised or impregnated	621030
Gloves, mittens and mitts, impregnated, coated or covered with plastics or rubber, knitted	611610
Gloves, mittens and mitts, of all types of textile materials (excluding knitted or crocheted)	621600
Gloves, mittens and mitts, of vulcanised rubber (excluding surgical gloves)	401519
Hats and other headgear, knitted or crocheted, or made up from lace, felt or other textile	650500
Hydrogen peroxide, whether or not solidified with urea	284700
Immunological products, put up in measured doses or in forms or packings for retail sale	300215
Instruments and apparatus for physical or chemical analysis, or for measuring or checking viscosity	902780
Instruments and appliances used in medical, surgical or veterinary sciences	901890
Made-up articles of textile materials, incl. dress patterns	630790
Medical, surgical or laboratory sterilizers	841920
Medicaments consisting of mixed or unmixed products for therapeutic or prophylactic purposes	300490
Men's or boys' garments of textile fabrics, rubberised or impregnated, coated, covered or laminated	621040
Needles, catheters, cannulae and the like, used in medical, surgical, dental or veterinary	901839
Ozone therapy, oxygen therapy, aerosol therapy, artificial respiration or other therapeutic	901920
Paper, cellulose wadding or webs of cellulose fibres, of a kind used for household or sanitary	481890
Spectacles, goggles and the like, corrective, protective or other (excluding spectacles for	900490
Surgical gloves, of vulcanised rubber (excluding fingerstalls)	401511
Syringes, with or without needles, used in medical, surgical, dental or veterinary sciences	901831
Thermometers and pyrometers, not combined with other instruments (excluding liquid-filled thermometers	902519
Thermometers, liquid-filled, for direct reading, not combined with other instruments	902511
Tubular metal needles and needles for sutures, used in medical, surgical, dental or veterinary	901832
Undenatured ethyl alcohol, of actual alcoholic strength of >= 80%	220710
Wadding, gauze, bandages and the like, e.g. dressings, adhesive plasters, poultices, impregnated	300590
Women's or girls' garments of textile fabrics, rubberised or impregnated, coated, covered	621050