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Trade Governance and Intra-Commonwealth Trade

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Abstract

This paper focuses on twenty-first century trade governance patterns within Commonwealth countries. The specific research questions it explores are: first, what is the distinction between the 'trade governance' and 'good governance' agendas? Second, what indicators exist for measuring trade governance and how its use can foster trade gains for the Commonwealth countries? Third, what policies can promote trade governance and enhance the Commonwealth Advantage – that is, higher intra-Commonwealth trade and investment and lower trade costs.

Using an augmented gravity model, we examine the relationship between Commonwealth countries' exports and trade governance, foreign direct investment, intellectual property rights, trade facilitation and contract enforcement. Results show a complementary relationship between exports and governance indicators. We find a positive correlation between Commonwealth countries' exports and foreign direct investment flows, intellectual property rights and trade facilitation variables, while efficient contract enforcement is important for intra-Commonwealth trade.

JEL Classification: F13, F14, O24

Keywords: trade governance, trade policy, intra-Commonwealth trade, foreign direct investment

Contents

Abbreviations and acronyms

CW	Commonwealth
EU	European Union
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
IPRs	Intellectual Property Rights
LPI	Logistics Performance Index
RTA	Regional Trade Agreement
UNCTAD	United Nations Conference on Trade and Development
UK	United Kingdom
US	United States
USA	United States of America
WDI	World Development Indicator
WGIs	World Governance Indicators
WTO	World Trade Organization

1. Introduction and context

Within the twenty-first century patterns of trade, major trade gains fall within the 'trade–investment/services–intellectual property nexus'. This suggests that movement beyond tariffs to different forms and levels of regulatory cooperation is important to unleash the trade potential of the Commonwealth countries.

The Commonwealth Secretariat has commissioned this paper on trade governance and intra-Commonwealth trade to analyse how enhanced trade governance within the Commonwealth countries could foster trade gains, on a both intra- and extra-Commonwealth basis. The broad objectives of this commissioned paper are to:

1. Distinguish between the 'good governance' and 'trade governance' agendas;
2. Examine how enhanced trade governance within the Commonwealth countries could foster greater trade gains, on a both intra- and extra-Commonwealth basis. This section employs applied modelling to understand the 'Commonwealth Advantage' – that is, intra-Commonwealth trade and investment – by using governance-specific indicators. These include domestic regulatory and institutional quality; investment and intellectual property rights protection; contract enforcement and payments; and logistics performance.
3. Present policy recommendations for the Commonwealth countries to strengthen and enhance the Commonwealth Advantage and reduce bilateral trade costs, through the use of effective trade governance structures.

The paper is organised as follows: *Section 2* distinguishes between trade governance and good governance, and presents an overview of how trade governance has evolved from a globally to a regionally driven approach. This section provides a framework within which to contextualise trade and good governance, and examines the literature that considers appropriate governance indicators to understand the role of trade governance within the context of Commonwealth countries.

Section 3 presents the augmented gravity modelling framework used to examine the role of trade governance on export flows, and the relationship between Commonwealth countries' exports and foreign direct investment (FDI), intellectual property rights (IPRs) and logistics performance indicators. Data sources include the World Governance Indicators (WGIs), the Logistics Performance Index (LPI) and Doing Business from the World Bank; FDI flows come from the United Nations Conference on Trade and Development (UNCTAD); and IPR payments and receipts from the World Bank World Development Indicators (WDI).

Section 4 presents the results on whether enhanced trade governance within the Commonwealth countries could foster gains, and how this can improve our understanding of the 'Commonwealth Advantage'. This section also sets the scene for a discussion of policy recommendations.

Section 5 outlines recommendations on ways to refine policies to enhance intra-Commonwealth trade and reduce bilateral costs, thus strengthening the Commonwealth Advantage and making trade governance more effective.

2. Good governance and trade governance: Literature review

'Good governance' was first used to describe the need for institutional reform and a more efficient public sector, especially in Sub-Saharan African countries (Osborne and Gaebler, 1992; Kaufmann et al., 1999). It was the World Bank that developed the concept of governance, defining it as 'the manner in which power is exercised in the management of a country's economic and social resources for development' (World Bank, 1992). This normative

concept evolved over time, and the emphasis moved from addressing the failures of top-down governance structures to resolving common issues from different perspectives. In the current context, good governance is the process of decision-making to overcome government failure, market failure and system failure, or a combination of these, and to implement decisions through interaction between formal and informal actors (Rogers and Hall, 2003).

From an international economic relations perspective, Christie et al. (2013) draw attention to the three dimensions of 'good governance'. The first is about rules, resources and power, how power is used and how institutions function. The second is about key principles such as participation and inclusion. The third encompasses several themes that affect transparency, accountability, democratisation, human rights, rule of law and administration of justice. The World Bank has developed the 'good governance' framework by comparing governance across countries and constructed six indicators to measure the quality of institutions (Kaufmann et al., 2005). According to this classification, governance is broadly defined as 'the set of traditions and institutions by which the authority is exercised in a country'. This includes the process by means of which governments are selected, monitored and replaced, represented by the following indicators: 1) voice and accountability and political stability; 2) the capacity of the government to effectively formulate and implement sound policies, which is represented by indicators such as government effectiveness and regulatory quality; and 3) the respect of citizens and the institutions that govern economic and social interactions among them, represented by the indicators of rule of law and control of corruption. This classification has been adapted and it is within the overall arching context that a theoretical and empirical trade governance framework is rapidly evolving (Sharma, 2013; Khorana et al., 2014; Gylfason et al., 2015).

Sharma (2010) eloquently defines 'trade governance' as 'consisting of institutions and organisational structures that determine the formulation and enforcement of rules and the associated negotiations over policies'. The review of literature highlights two major forms of trade governance: regional and global (see Li, 2003;[1] Sharma, 2010,[2] 2013). Studies suggest that global trade governance, as embodied in the erstwhile General Agreement on Tariffs and Trade and the present World Trade Organization (WTO), is characterised as a rules-based system (Mayer, 1981; Keohane, 1984; Jackson, 1989; Bagwell and Staiger, 1999, 2002). Regional governance is a more recent development attributed to the proliferation of trading arrangements following lack of progress on the Doha Development Round (2001–2013). The evolution of trade governance under regional trade agreements (RTAs) changed the focus of trade governance – from traditional reduction of tariffs to broad-based commitments that address the quality of institutions and promote participatory approaches. The emphasis in this form of trade governance includes deep commitments on investment, procurement, competition policy and IPR issues characterised by participatory and consensus-oriented accountability and transparency. Thus, the difference between global and regional trade governance is fundamental in that the former is largely rules-based whereas the latter can be characterised as relationship-based with flexibility in the incorporation of rules (Sharma, 2010).

A review of recent literature suggests that studies on trade governance examine a number of indicators. Hamanaka et al. (2015) construct an indicator of trade governance (proxied by quality of trade statistics at the 2-digit level) for 159 countries and global rankings with G20 economies.[3] The study tests the ability of the trade governance index to capture the quality of governance and whether it is bias-free. It concludes that trade governance is influenced by 'factors outside the confines of trade governance issues', which include the efficiency and soundness of government policy, especially customs. Others (see Brewer et al., 2007; Behar, 2010; Langbein and Knack, 2010) use the LPI and WGIs to examine and test the level of consistency among governance indicators. While some report a positive relationship between trade openness and corruption, others focus on country-specific studies to test the significance of experience-based corruption in explaining corruption indices (Razafindrakoto and Roubaud, 2005; Kurtz and Schrank, 2007; Treisman, 2007).

There is mixed evidence on the relationship between governance indicators and performance and how this affects countries' economic performance. Further, the relationship with development varies across the dimensions of

governance and levels of economic development. For example, Han et al. (2014) find a positive relationship such that government effectiveness, political stability, control of corruption and regulatory quality have a significantly greater impact on growth performance compared with voice and accountability and rule of law. Studies that survey connections between governance, economic growth and inequality (Zhuang et al., 2010) report a positive and robust relationship between democratic governance variables, economic growth and income levels (Gerring et al., 2005; Persson and Tabellini, 2006). Han et al. also report that governance matters for development, and that better governance correlates with faster growth and higher income levels.

Studies highlight that the quality of institutions is a necessary condition and an important determinant of trade and effective governance (Aron, 2000). Using trade governance indicators, Busse et al. (2007) report that the quality of institutions is an important determinant of economic growth and income levels. Busse et al. identify three channels that contribute to positive linkages between trade and institutions, and suggest that trade influences institutions from a governance perspective. First, economic agents in open economies learn from experience in trading partner countries by adapting (or imitating) successful institutions and regulations. Second, international competition generates pressure on countries to improve institutional and regulatory settings, as domestic firms/producers are likely to go out of business without reforms. Finally, rent-seeking and corruption are harder in open economies, as foreign firms' participation increases the number of economic agents in the country (Rajan and Zingales 2003).

Studies (see Busse and Hefeker, 2007) examining the effect of governance indicators on FDI show that government stability, absence of internal and external conflicts, low presence of corruption and ethnic tensions, law and order, democratic accountability of the government and high quality of the bureaucracy are highly significant determinants of FDI inflows.

A review of literature suggests a lack of unanimous evidence on the possible causal connections between a country's regime history and economic policy. The arguments advanced tend to be speculative, since the causal pathways are usually difficult to identify and test empirically (Montinola and Jackman, 2002; Keefer 2003; Bohara et al., 2004; Lederman et al., 2005; Kapstein and Converse, 2008).

Recent academic debate has focused on the effectiveness of governance and regional trade (see Bagwell and Staiger, 2002; Cooley and Spryut, 2009; Sharma, 2010). Studies report that the regional governance mode, if designed in accordance with membership characteristics and priorities, is likely to facilitate the exploitation of key advantages of trade governance systems. Sharma (2013) concludes that regional trade governance leads to innovation of rules and other governance mechanisms, and negotiations generally involve a wider set of issues that are important to negotiating partners, which allows for more effective discussion and enforcement of resulting agreements.

Summing up the above research in this area, and also considering the purpose of this paper, the present study considers 1) how governance indicators can develop our understanding of trade governance and 2) how enhanced trade governance within the Commonwealth countries could foster gains on an intra- and extra-Commonwealth basis. Thus, we examine empirically, using a gravity model augmented with governance indicators, whether an improvement on governance indicators leads to higher exports from and between Commonwealth countries.

3. Trade governance indicators, data and methodology

The indicators employed are from the WGIs, the LPI and Doing Business obtained from the World Bank database, complemented with FDI information from UNCTAD and IPR payments and receipts from the WDI.

3.1 Indicators

3.1.1 World Governance Indicators

The WGIs, constructed by Kaufmann et al. (2005) for the World Bank, are normalised onto a 0–100 scale (as in Berden et al., 2014).[4]

The six aggregate indicators are based on 31 data sources that report the perceptions of survey respondents and assessments worldwide. Each indicator (below) represents a different dimension of governance:

1. *Voice and accountability* measures the extent to which a country's citizens are able to participate in selecting their government, as well as the freedoms of expression, association and the media. This variable best captures most individuals' notions of how a democratic institution fosters voice and accountability.
2. *Political stability* measures the perceptions of the likelihood that a government will not be destabilised or overthrown by unconstitutional or violent means.
3. *Government effectiveness* measures the quality of public services, the civil service (and its degree of independence), the policy formation and implementation process and the overall commitment to implementing policies.
4. *Regulatory quality* indicates the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.
5. *Rule of law* measures the extent to which agents have confidence in and abide by the rules of society, with particular emphasis on the quality of contract enforcement, the police and the courts.
6. *Control of corruption* measures the extent to which public power is not exercised for private gain, including both petty and grand forms of corruption as well as the extent of 'capture' by elites and private interests.

Berden et al. (2014) group the above indicators into three categories. The first deals with the 'process by which governments are selected, monitored and replaced', measured by two indicators: 1) voice and accountability of a country's citizens and 2) political stability. According to Berden et al., holding constant the influences of other measures of governance, the effect of improvements on these indicators on imports should be negative. In particular, they argue that political stability could increase both the probability and the level of FDI. Consequently, if political stability lowers the cost of FDI, and FDI and trade are substitutes in relation to relative investment and trade costs, political stability will have a negative effect on trade.

The second category refers to factors influencing the 'capacity of governments to effectively formulate and implement sound policies'. The two WGIs associated with this category are 3) government effectiveness and 4) regulatory quality. Both are expected to be positively associated with trade flows.

Finally, the third category refers to factors associated with 'respect of citizens and the state of institutions that govern economic and social interactions'. The related WGIs are 5) rule of law and 6) control of corruption. Both are expected to be positively associated with trade flows.

Relevant literature substantiates the relationship between governance indicators – that is, institutions and exports can directly affect the willingness of agents to trade abroad or have an impact on economic variables that may in turn affect the propensity of agents to trade (Méon and Sekkat, 2004). This suggests that, on the one hand, an improvement in the governance indicators of Commonwealth countries may increase exports and lead to a conducive business environment, thereby facilitating trade and the 'Commonwealth Advantage'. On the other hand, an improvement in governance indicators may affect countries' comparative and competitive advantage, as well as existing trade relationships, with an ambiguous effect on exports. Within this context, this paper tests whether improved governance indicators result in an increase in exports from and between the Commonwealth group of countries.

3.1.2 Foreign direct investment

The literature provides ample evidence on the trade and FDI (outward and inward) relationship. Studies reporting on the FDI–trade nexus suggest that foreign-invested firms import intermediate inputs for final production in the host country and export finished goods back to the FDI home country or to third-country markets (Wei and Liu, 2001; Cuyvers et al., 2008). Using bilateral panel data for 1984–1998 on China and 19 regions, Liu et al. (2001) examine the causal relationship between inward FDI and international trade and show that China's import growth led to inward FDI growth from a home country/region, which in turn increased Chinese exports to the home country/region, which in turn led to import growth.

Using cross-sectional firm-level data, Lipsey and Weiss (1981) report a positive relationship between the output of US firms in foreign subsidiaries and the firms' exports from the USA to these subsidiaries. In other words, a higher level of output by a US firm leads to higher firms' exports from the USA. Min (2003) also shows positive effects of FDI (on Malaysia's exports), using industry-specific and FDI-investing country data.

Studies examine whether FDI and trade are substitutes or complements (see Wei and Liu, 2001; Liu et al., 2001). Although traditional economic theory assumes that trade and FDI are substitutes (Mundell, 1957), trade and FDI can be complements under certain assumptions (e.g. Schmitz and Helmberger, 1970). Empirical evidence from regions worldwide highlights the existence of complementary effects between FDI and exports (Egger, 2001; Brouwer et al., 2008; Cheung and Qian, 2009; Chen et al., 2012).

Brouwer et al. (2008) estimate gravity models of trade and FDI for a sample of 28 European countries over 1990–2004. The study reports a positive and significant correlation between bilateral FDI and trade, when FDI is included as an explanatory variable in the gravity model. Egger (2001) obtains similar results for 1988–1996. Chen et al. (2012) also analyse the relationship between outward FDI and exports, for 15 Taiwanese manufacturing industries over 1991–2007. The results, obtained using random and fixed effects estimators, confirm complementarity between FDI and exports. Finally, Cheung and Qian (2009) also report a positive relationship and observe that this gets stronger when the host countries are developing economies.

3.1.3 Intellectual property rights

IPRs are a set of national laws and rules that protect the economic value of patents, copyrights and trademarks to offer incentives for the production of knowledge. The WDI collect information on charges for the use of intellectual property such as payments and receipts between residents and non-residents for the authorised use of patents, trademarks, copyrights, industrial processes and designs including trade secrets, and franchises. It also collects such information for produced originals or prototypes (such as copyrights on books and manuscripts, computer software, cinematographic works and sound recordings) through licensing agreements, and related rights (such as for live performances and television, cable or satellite broadcast).

Literature on IPR regimes reports that, from a static welfare perspective, the destination country loses from protection but the source country benefits (Deardorff, 1991; Helpman, 1993). However, from a dynamic point of view, an IPR regime stimulates innovation in the source country and fosters trade, benefiting both the trading partners, but the benefits are reaped as long as the social return on innovation exceeds private returns (Diwan and Rodrik, 1991).

For this study, we use IPR payments and recipients, the number of patent applications as the sum of foreign and domestic patent applications and the total number of trademark applications reported in the WDI. Given that IPRs are territorial, any differences in the national regulations and norms on IPR protection can distort international trade patterns. It is in this context that harmonisation of IPR rules is likely to have a positive effect on trade.

3.1.4 Logistics performance indicators

The LPI is an overall metric of supply chain efficiency that lists information on where a country is in terms of logistics and provides a broad indication of the problem areas.[5] Covering 160 countries (in LPI 2014), the index is constructed from over 5,000 country assessments by more than 1,000 freight forwarders and logistics professionals worldwide. The respondents rate the logistics performance of their country and eight other countries on a scale of 1–5.

The LPI is published every two years and covers 2007, 2010, 2012, 2014 and 2016. Studies examining the LPI–trade nexus suggest that the LPI has a significant impact in terms of raising awareness and pushing for comprehensive 'connectivity' and logistics policies, as reported in the case of the Indonesia, Kazakhstan, the EU and Asia-Pacific Economic cooperation members. The 2007–2016 LPI report suggests that the gap between the 'best' and the 'worst' logistics performers is narrowing slowly, confirming that, although a country's level of development plays an important role, logistics performance policies do matter. An example is Indonesia – an over-performing country in terms of the LPI that has initiated reforms to improve national logistics efficiency. In terms of trade facilitation, the customs in the country show

an improvement but the other border control agencies still lag. Subsequent LPI reports also highlight that the main challenge is the initiation of reforms in more than one area in line with the needs of the country.

3.1.5 Doing Business Indicators

Doing Business data provide objective measures of business regulations and enforcement across 190 economies and selected cities at the subnational and regional level. They capture several dimensions of the regulatory environment and measure the regulations that apply to firms through their life cycle. The data are based on a detailed reading of domestic laws and regulations as well as administrative requirements. The information is collected through several rounds of communication with expert respondents (both private sector practitioners and government officials), questionnaires, conference calls, written correspondence and visits by the team. Doing Business relies on four main sources of information: the relevant laws and regulations, Doing Business respondents, the governments of the economies covered and World Bank Group regional staff.

Here, the first indicator this paper uses is trade facilitation, accessing variables from the Doing Business database that measure the time and cost (excluding tariffs) associated with three sets of procedures – documentary compliance, border compliance and domestic transport – within the overall process of exporting or importing a shipment of goods. Studies assessing the impact of trade facilitation on trade use different definitions of trade facilitation. For example, Wilson et al. (2003, 2005) consider a broad definition, and quantify the impact of four different measures: port efficiency, customs environment, regulatory environment and e-business usage. Engman (2005) uses the WTO definition, which includes simplification and harmonisation of international trade procedures, and takes into account what happens around borders. Wilson et al. (2003, 2005)[6] also focus on the effects of single measures of trade facilitation, such as information technology, port efficiency and institution quality.

Several studies use the gravity model of trade augmented with 'trade facilitation' variables. Examples include Wilson et al. (2003, 2005), who examine the trade facilitation variables for a sample of countries in the Asia-Pacific region. Soloaga et al. (2006) focus on Mexican competitiveness. Djankov et al. (2010) use the World Bank's Doing Business database but focus only on the effects of time delays in the exporting country. Nordas et al. (2006) examine how time delays affect probability to export and export volumes for imports from Japan, Australia and the UK. Persson (2007) studies the effect of time delays and transaction costs on trade flows using a sample selection approach and focuses on the specific effects for each of the six groups of African, Caribbean and Pacific countries negotiating economic partnership agreements with the EU. Martínez-Zarzoso and Márquez-Ramos (2008) analyse the effect of trade facilitation on trade volumes at a disaggregated level and focus on the simplification of 'border procedures', which covers the number of documents and amount of time involved in border crossings, as well as transaction costs incurred.

The second indicator used here is contract enforcement. On this, the *Doing Business* database records the time and cost associated with the logistical process of exporting and importing goods. For instance, the indicator measures the time and cost of resolving a commercial dispute through a local first-instance court and the quality of the judicial processes index, evaluating whether each economy has adopted a series of good practices that promote quality and efficiency in the court system. The most recent round of data, collected in June 2017, comes from the study of codes of civil procedure and other court regulations, as well as questionnaires completed by local litigation lawyers and judges. The ranking of economies on the ease of enforcing contracts is determined by sorting their distance to frontier scores for enforcing contracts.

A review of the literature brings up studies that examine how contract enforcement affects the volume of international trade. For example, Anderson and Marcouiller (2002) test for the implications of contract enforcement for the volume of trade but do not make a distinction between different types of goods. Ranjan and Lee (2007) do makes this distinction, estimating a gravity-type equation for trade in different classes of goods[7] and measuring how contract enforcement affects the volume of trade. They conclude that the impact is larger for differentiated goods.

3.2 Data and methodology

3.2.1 Data

The databases used to construct the explanatory variables for the regression analysis are:

- The *WGIs* on governance – that is, voice and accountability, political stability, government effectiveness, regulatory quality, rule of law, control of corruption;
- The *WDI* on IPR payments and recipients, the number of patent applications as the sum of foreign and domestic patent applications and the total number of trademarks applications;
- *UNCTAD data* on FDI inflows and outflows;
- *The LPI* database on number of days to export, cost to export a container and documents required to export/import;
- The *Doing Business database* on trade facilitation and contract enforcement.

Data from the WGIs are for 1998–2013. FDI data from UNCTAD are for 1996–2013. IPR data from the WDI is for 1996–2003, and we use a proxy for the level of protection in any given country. Contract enforcement and trade facilitation indicators are for 2007–2016.[8] Bilateral trade data from UNCTAD are for 1996–2013.

The list of countries and Commonwealth countries (in bold) are in Appendix 1. Variable definitions and summary statistics are provided in Appendices 2 and 3, respectively.

3.2.2 Methodology

In line with recent empirical studies that investigate the determinants of bilateral trade flows (Head and Mayer, 2014), our modelling framework uses the gravity model of trade. The rationale for the selection of the gravity framework is that it provides a good statistical fit for most datasets and can be extended with policy variables.[9] We augment a gravity model for aggregated exports with governance indicators to determine the role of governance in trade flows. We hypothesise that each governance indicator has an impact on trade.

The model in its basic form assumes that trade between countries is directly related to a country's size and inversely to the distance between them. Exports from country i to country j, X_{ij}, are explained by the economic size (i.e. gross domestic product, GDP), direct geographical distance and a set of dummies that include common characteristics such as common language, common border or colonial relationships. The specification of the gravity model of trade in its original multiplicative form for a single year is given by:

$$X_{ij} = \beta_0 GDP_i^{\beta_1} GDP_i^{\beta_2} DIST_{ij}^{\beta_3} A_{ij}^{\beta_4} u_{ij} \qquad (1)$$

where GDP_i (GDP_j) indicates the GDP of the exporter (importer), $DIST_{ij}$ measures the distance between the two countries' capitals (or economic centres).

A high level of income in the exporting country indicates a high level of production, which increases the availability of goods for exports. Therefore, β_1 is expected to be positive. The coefficient of Y_j, β_2, is also expected to be positive since a high level of income in the importing country suggests higher imports. The distance coefficient is expected to be negative since it is a proxy of all possible trade cost sources. A_{ij} represents any other factors aiding or preventing trade between pairs of countries and u_{ij} is the error term. Usually, A_{ij} includes dummy variables for trading partners sharing a common language, colonial ties and a common border, as well as trading bloc dummy variables that evaluate the effects of preferential trade agreements. The coefficients of all these bilateral variables are expected to be positive.

When the gravity model of trade is estimated using panel data, a time dimension is incorporated into the model. For estimation purposes, equation (1), in log-linear form, is augmented with governance indicators and with the time dimension, and written as:

$$\begin{aligned} lnX_{ijt} = {} & \beta_0 + \beta_1 lnGDP_{it} + \beta_2 lnGDP_{jt} \\ & + \beta_3 PClnGDP_{it} + \beta_4 lnPCGDP_{jt} \\ & + \beta_5 lnArea_i + \beta_6 lnArea_j + \beta_7 LANDL_i \\ & + \beta_8 LANDL_j + \beta_9 (lnDIST_{ij}) \\ & + \beta_{10} (CONTIG_{ij}) + \beta_{11} (COMLANG_{ij}) \\ & + \beta_{12} (COLONY_{ij}) + \beta_{13} \mathrm{RTA}_{ijt} \\ & + \beta_{14} \mathrm{WTO}_{ijt} + \beta_{15} VA_{it} + \beta_{16} PS_{it} \\ & + \beta_{17} GE_{it} + \beta_{18} RQ_{it} + \beta_{19} RL_{it} \\ & + \beta_{20} CC_{it} + \beta_{21} VA_{jt} + \beta_{22} PS_{jt} \\ & + \beta_{23} GE_{jt} + \beta_{24} RQ_{jt} + \beta_{25} RL_{jt} \\ & + \beta_{26} CC_{jt} + \delta_t + \varepsilon_{ijt} \end{aligned} \qquad (2)$$

where the variables are as follows:

- $lnGDP_{it}$ and $lnGDP_{jt}$ are as defined above;
- $lnPCGDP_{it}$ and $lnPCGDP_{jt}$ are the GDP per capita of an exporter (importer);
- $lnArea_i$ and $lnArea_j$ are the area of the corresponding country in square kilometres;
- $lnLANDL_i$ and $lnLANDL_j$ are dummy variables that take the value of 1 if the country i (j) is landlocked;
- $DIST_{ij}$ is the bilateral distance between the economic centres of i and j;
- $CONTIG_{ij}$ is a dummy variable assuming a value of 1 if the two countries share a common land border (and 0 otherwise);
- $COMLANG_{ij}$ is a dummy variable that takes a value of 1 if the two countries share a common language;
- $COLONY_{ij}$ is a dummy variable that takes the value of 1 when countries i and j have ever had a colonial relationship, and 0 otherwise;
- RTA_{ijt} takes the value of 1 if countries i and j belong to the same regional integration agreement;
- WTO_{ijt} takes the value of 1 if countries i and j are members of the WTO in year t.

The other variables include the six measures of the WGI from the World Bank:

- Voice and accountability (VA);
- Political stability (PS);
- Government effectiveness (GE);
- Regulatory quality (RQ);
- Rule of law (RL);
- Control of corruption (CC).

Each variable is specified in the model (2) with the subscripts $_{it}$ or $_{jt}$ denoting that these vary by exporter-and-time or importer-and-time. As in Berden et al. (2014), we standardise the WGI variables to range between 0 and 100 to aid interpretation of the results.

- RTA: As a proxy for regional governance, a dummy variable is used that takes the value of 1 when a pair of countries has an RTA in a given year, and 0 otherwise.
- WTO: As a proxy for global governance, we use a dummy variable that takes the value of 1 if a pair of trading countries both belong to the WTO, and 0 otherwise.

We test how the RTA and WTO 'effects' vary for Commonwealth countries and for intra-Commonwealth trade (i.e. all countries within the Commonwealth group) in comparison with non-Commonwealth countries to examine how and if there is an impact on the Commonwealth Advantage.

A similar comparison and analysis is carried out for the WGIs and for the FDI, IPR, LPI and Doing Business indicators.

4. Empirical analysis

4.1 Governance indicators and trade

Table 1 presents the results of the gravity model augmented with governance indicators from the WGI. The model is estimated for: All Countries – that is, Commonwealth (CW) and non-CW countries (column 1); CW Countries – that is, countries exporting to any other country (column 2); Intra-CW Trade Flows – that is, countries from within the CW group (column 3) for 1998–2013.

Column (1) (Table 1) shows that an increase in the GDP of exporting and importing countries increases trade flows, and the coefficients are close to the unitary theoretically expected magnitude. Distance has an expected negative and significant effect on exports, while common language, common border and colonial links positively affect exports. The income elasticities of CW exporters and intra-CW trade are slightly lower than the elasticity of all exporters, and income per capita shows a positive coefficient, indicating that higher income levels foster CW exports. With regard to the common language effect, it is slightly higher for the whole sample, whereas common colony shows a non-significant relationship for CW countries. RTA and WTO membership dummies also present the expected positive effect on exports. The results for the gravity variables, however, vary when the sample of exporters is restricted to CW exporting countries, as seen in column (2), and to intra-CW trade flows in column (3) of Table 1.

Table 1. Exports and governance

Dep. VAR: ln X	(1)	(2)	(3)
Exp. VARIABLES	All	CW_EXP	Intra_CW
Ln GDP exporter	1.352***	1.315***	1.244***
	[0.0118]	[0.0203]	[0.0374]
Ln GDP importer	0.939***	0.885***	0.867***
	[0.0114]	[0.0228]	[0.0393]
Ln GDP per head exporter	–0.173***	0.111***	0.217***
	[0.0168]	[0.0309]	[0.0569]
Ln GDP per head importer	–0.187***	–0.135***	–0.0556
	[0.0155]	[0.0318]	[0.0551]
Ln area importer	–0.0759***	–0.107***	–0.0891***
	[0.00942]	[0.0193]	[0.0303]
Ln area exporter	–0.0928***	–0.0721***	–0.0596**
	[0.0102]	[0.0155]	[0.0296]
Importer is landlocked	–0.802***	–0.874***	–0.930***
	[0.0364]	[0.0745]	[0.150]
Exporter is landlocked	–0.380***	–0.835***	–0.904***
	[0.0373]	[0.105]	[0.174]
Ln geographical distance	–1.246***	–1.267***	–1.620***
	[0.0193]	[0.0415]	[0.0695]
Common border	1.208***	1.586***	1.023***
	[0.0940]	[0.223]	[0.278]
Common language	0.669***	0.620***	0.309***
	[0.0408]	[0.0751]	[0.115]
Common colonial relationship	0.632***	0.0542	–0.236
	[0.0612]	[0.0871]	[0.124]
RTA	0.768***	1.193***	1.517***
	[0.0382]	[0.0877]	[0.159]
WTO membership	0.188***	0.307***	0.148
	[0.0306]	[0.0700]	[0.174]
Commonwealth Advantage	0.187***	0.331***	
	[0.0641]	[0.0835]	
VA (exporter)	0.00619***	–0.0161***	–0.0182***
	[0.000806]	[0.00209]	[0.00393]
VA (importer)	0.00643***	0.00702***	0.0115***
	[0.000694]	[0.00151]	[0.00328]
PS (exporter)	0.0183***	0.0118***	0.0114***
	[0.000909]	[0.00211]	[0.00394]
PS (importer)	0.00782***	0.0115***	0.0142***
	[0.000790]	[0.00174]	[0.00362]
GE (exporter)	0.0245***	0.0343***	0.0282***
	[0.00121]	[0.00338]	[0.00608]
GE (importer)	0.0124***	0.0197***	0.0154***
	[0.00107]	[0.00229]	[0.00491]
RQ (exporter)	0.0190***	0.0221***	0.0154**
	[0.00117]	[0.00332]	[0.00600]

Table 1. Exports and governance

Dep. VAR: ln X	(1)	(2)	(3)
Exp. VARIABLES	All	CW_EXP	Intra_CW
RQ (importer)	0.0101***	0.0132***	0.00700
	[0.00103]	[0.00224]	[0.00504]
RL (exporter)	0.0158***	0.0181***	0.0121***
	[0.00105]	[0.00264]	[0.00466]
RL (importer)	0.0111***	0.0205***	0.0212***
	[0.000939]	[0.00209]	[0.00428]
CC (exporter)	0.0117***	0.0129***	0.0102**
	[0.000898]	[0.00240]	[0.00433]
CC (exporter)	0.00869***	0.0160***	0.0171***
	[0.000840]	[0.00182]	[0.00375]
Time FE	Yes	Yes	Yes
Observations	245,375	62,227	18,179
R-squared	0.659	0.616	0.626

Note: Robust standard errors in brackets, clustered by ij. *** p<0.01, ** p<0.05, * p<0.1.
Period 1998–2013 in all columns.

The RTA effect is positive and statistically significant in all three columns, but the magnitude varies substantially. In particular, exports are 115 per cent higher to a country's trading partners when there is a common RTA, compared with exports to countries outside the RTA. The results also show that the CW exporters trade twice as much as a result of the RTA effect and intra-CW trade is three times higher between countries with RTAs than between countries outside any RTA constellation. Moreover, the RTA effect is greater in magnitude than the trade effect of being a WTO member.

WTO membership indicates the strength of global trade governance for a pair of countries. Results show that, when the trading partners belong to the WTO, they trade 20 per cent more than countries that are not WTO members. The same is the case for CW exporters (column 2), for which the WTO effect is over 30 per cent.

The Commonwealth Advantage is positive and significant. Results show that the CW pairs of countries trade 20 per cent [$(e^{0.0.18}-1)*100$] more than any other country pairs, keeping the other explanatory variables constant (column 1). In the second column, when only CW exporters are considered, the Commonwealth Advantage is even bigger – around 39 per cent [$(e^{0.33}-1)*100$]. This indicates that the CW countries export almost 40 per cent more to CW members than to other countries, holding constant all the other factors included in the gravity model – that is, accounting for other factors affecting trade, such as WTO membership, sharing a language or a border or colonial link.

The analysis of governance indicators shows that the coefficients obtained in column (1) are positive and significant for both exporter and importer countries. The results in columns (2) and (3) show that, for CW exporters, the outcomes differ when compared with column (1) for voice and accountability, and a negative and significant coefficient for an exporter, indicating that an increase by 1 percentage point in the indicator decreases exports by 1 per cent. For the other five indicators (political stability, governance effectiveness, regulatory quality, rule of law, control of corruption), the coefficients remain positive in column (2) and are in general higher than in column (1), indicating that trade governance in an exporter and an importer country has a greater effect on exports for CW exporters. For example, according to the results in column (3), an increase of 1 percentage point on governance effectiveness in an exporter increases exports by 3.4 per cent (0.034*100) for a CW exporting country, whereas the increase for any world exporter is 2.4 per cent, holding all other factors constant.

All the CW developed countries have government effectiveness of above 90. However,

for most CW developing countries, improvements in governance are gains in terms of higher exports. Assuming that all CW developing countries reach the level of governance effectiveness (=70 in 2016) of Malaysia, this translates into an average increase in the index of around 26 percentage points. When we consider the corresponding increase in the index for individual CW countries (for which the index is below 70), this translates into a predicted yearly average increase in exports for the CW countries to all destinations of around 5.6 per cent. This finding reiterates the importance of government effectiveness in trade.

4.2 Foreign direct investment and exports

Table 2 shows the results when the gravity model, for the same sample of countries for 1996–2013, is augmented with FDI variables. The results are for: All Exporters, CW Exporters and Intra-CW Trade, in columns (1), (2) and (3), respectively. This does not present the coefficients for some gravity variables, including RTA, WTO and CW Advantage, given that these are similar to what is reported in Table 1.

We expect to find a positive correlation between inward and outward FDI stocks and trade. The results (Table 2) indicate that an increase of 10 per cent in the stock of inward FDI in an exporter country is associated with a 3 per cent increase in exports (column 1). This increase is slightly lower for CW exporters, at around 2.8 per cent, and for intra-CW exports, at 2.46 per cent.

Further, higher levels of inward FDI leads to an increase in importing countries' exports, but the elasticities are lower (0.19) for the whole sample, when compared with the CW exporters with an elasticity of 0.12.

Regarding outward FDI, higher outward FDI is associated with higher exports. Note that the magnitude of estimated elasticities is higher for intra-CW exports (column 3) than for the whole sample and for CW exporters as a group (see columns 1 and 2, respectively).

Finally, neither inward nor outward FDI for an importer country is statistically significant to explain intra-CW exports.

4.3 Intellectual property rights and exports

Table 3 shows results for the gravity model augmented with IPR variables for 1996–2003. The results are for: All Exporters, CW Exporters and Intra-CW Trade in columns (1), (2) and (3), respectively. The coefficients of the other gravity variables, including RTA, WTO and CW Advantage , are not presented, given that these are practically the same as in Table 1.

The results indicate that higher payments and receipts for the use of proprietary rights

Table 2. Exports and FDI (summary table)

	All		CW_EXP		INTRA_CW	
Dep. VAR: ln X Exp. VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
Ln inward FDI (exporter)	0.307***		0.281***		0.246***	
	[0.0137]		[0.0286]		[0.0519]	
Ln inward FDI (importer)	0.192***		0.124***		0.0377	
	[0.0129]		[0.0268]		[0.0516]	
Ln outward FDI (exporter)		0.144***		0.129***		0.152***
		[0.00923]		[0.0184]		[0.0359]
Ln outward FDI (exporter)		0.114***		0.126***		0.0534
		[0.00881]		[0.0180]		[0.0342]
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	268,638	207,208	69,274	50,899	20,592	13,625
R-squared	0.670	0.684	0.623	0.634	0.632	0.650

Note: The model includes the same regressors as in Table 1 apart from the WGIs, which are replaced by the FDI variables. Robust standard errors in brackets, clustered by ij. *** p<0.01, ** p<0.05, * p<0.1.
Period 1996–2013 in all columns.

Table 3. Exports and IPRs (summary table)

Dep. VAR: ln X	(1)	(2)	(3)
Exp. VARIABLES	All	CW_EXP	INTRA_CW
Ln IPR payments (exporter)	0.0564***	0.0157	0.0541*
	[0.00909]	[0.0186]	[0.0281]
Ln IPR payments (importer)	0.261***	0.253***	0.269***
	[0.0108]	[0.0187]	[0.0310]
Ln IPR receipts (exporter)	0.0527***	0.104***	0.110***
	[0.00706]	[0.0147]	[0.0213]
Ln IPR receipts (exporter)	0.0431***	0.0576***	0.0874***
	[0.00866]	[0.0148]	[0.0245]
Ln patent applications (exporter)	0.111***	–0.0485	0.221***
	[0.0135]	[0.0289]	[0.0726]
Ln patent applications (importer)	0.325***	0.672***	0.618***
	[0.0141]	[0.0338]	[0.0631]
Ln trademark (exporter)	0.153***	–0.0533	0.138*
	[0.0143]	[0.0297]	[0.0733]
Ln trademark (importer)	0.384***	0.624***	0.511***
	[0.0174]	[0.0390]	[0.0726]
Time FE	Yes	Yes	Yes

Note: The model includes the same regressors as in Tab le 1 apart from the WGIs, which are replaced by IPR variables. Robust standard errors in brackets, clustered by ij. *** p<0.01, ** p<0.05, * p<0.1.
Period 1996–2013 in all columns.

in an exporter country (an importer) are positively correlated with exports in column (1), whereas in columns (2) and (3) this is only for the importer country.

Similar results are obtained for the number of patents and trademark applications, suggesting that higher innovation levels of the importing country increase exports from the CW countries and intra-CW trade.

4.4 Doing Business indicators and exports

Table 4 shows the results for the gravity model augmented with contract enforcement and trade facilitation variables for: All Exporters, CW Exporters and Intra-CW Trade, in columns (1), (2) and (3), respectively. As in previous cases, the coefficients for other gravity variables are not shown, since they are similar to in Table 1, with the exception of the CommonwealthAdvantage , which is considerably higher when considering countries with similar levels of trade facilitation.

The first trade facilitation variable considered is the LPI score, which is positively correlated with bilateral exports in columns (1)–(3), indicating that an increase of 1 per cent on the index is associated with an increase of 1.7 per cent in exports. The coefficient is lower in column (2) for CW exporters and slightly higher in (3) for intra-CW trade. An increase in the index of 1 per cent increases exports more than proportionally, by 1.7 per cent for intra-CW trade.

With regard to number of days to export, the coefficients are statistically significant and negative, indicating that a reduction in the number of days needed to export will increase exports for the whole sample and for CW exporters. However, the coefficient is not statistically significant for intra-CW trade. The magnitude of the effect is considerably higher for CW exporters (column 2), indicating that a reduction in the number of days to export of 10 per cent, equivalent to two days less needed for the average exporter, increases exports by 6.7 per cent in Commonwealth exporters (column 2), but only by 4.8 per cent in the whole sample (column 1).

Table 4. Exports and Doing Business (summary table)

Dep. VAR: ln X	(1)	(2)	(3)
Exp. VARIABLES	All	CW_EXP	INTRA_CW
Ln LPI	1.722***	1.173***	1.710***
	[0.0600]	[0.132]	[0.304]
Ln days needed to export	–0.478***	–0.669***	–0.220
	[0.0605]	[0.110]	[0.252]
Ln days needed to import	0.128***	0.232***	–0.00298
	[0.0455]	[0.0744]	[0.141]
Ln cost to export a container	–0.483***	–0.490***	–0.355*
	[0.0545]	[0.106]	[0.195]
Ln cost to import a container	–0.0700	–0.239**	–0.270
	[0.0544]	[0.0943]	[0.186]
Ln documents needed to export	–0.425***	–0.436***	–1.228***
	[0.0695]	[0.132]	[0.398]
Ln documents needed to import	–0.254***	–0.650***	–0.624**
	[0.0629]	[0.144]	[0.263]
Ln days to enforce a contract (exporter)	–0.426***	–0.534***	–0.648***
	[0.0422]	[0.0800]	[0.159]
Ln days to enforce a contract (importer)	–0.409***	–0.403***	–0.368**
	[0.0432]	[0.0800]	[0.150]
Commonwealth Advantage	0.550***	0.709***	
	[0.0806]	[0.0965]	

Note: The model includes the same regressors as in Table 1 apart from the WGIs, which are replaced by trade facilitation variables. Robust standard errors in brackets, clustered by country pair. *** p<0.01, ** p<0.05, * p<0.1. Period 2007–2016.

The results for cost to export a container, with the expected sign, indicate that a reduction of 10 per cent in the costs incurred for goods to exit the country is associated with a 4.8 per cent increase in exports for the average exporter (4.9 per cent for CW exporters, column 2, and 3.5 per cent for intra-CW trade, column 3).

Number of documents required to export has the expected negative coefficient, in columns (1)–(3). The results indicate that fewer documents required to export results in higher exports. The negative coefficient, as expected in column (2) for CW exporters, is slightly higher than in column (1), but much higher for intra-CW in column (3). Thus, if the number of documents required to export is reduced to two (equivalent to a 20 per cent reduction in CW countries), this will increase trade by 24 per cent [–1.228*20], whereas in the all countries case (column 1) the increase will be only 8.4 per cent [–0.425*20], substantiating that reduced document requirement enhances trade between CW countries.

Important differences emerge for number of days to enforce a contract. The elasticity is –0.426 for all exporters (column 1) and –0.648 for intra-CW trade (Col 3). The maximum number of days needed to enforce a contract is 1,785 for the whole sample and 1,442 for the CW countries, respectively. If number of days to enforce a contract is reduced to the minimum (which is 120 days in Singapore), the corresponding average number of days to enforce the contract for all countries and CW countries is 651 and 619, respectively. For intra-CW trade, total number of days to enforce a contract reduces to 499. Such a reduction will lead to higher exports for intra-CW exporters, and as a result intra-CW exports will increase by 6.4 per cent for each 10 per cent reduction in the number of days to enforce a contract.

5. Summary of results and policy recommendations

This paper uses the gravity model augmented with governance indicators and FDI, IPR, trade facilitation and contract enforcement variables. The overall analysis of interactions between the governance indicators, as defined in the WGI database, suggests a complementary relationship between the quality of domestic governance and exports. Results show that distance has an expected negative (and significant) effect on exports, unlike common language, common border and colonial links, which affect exports positively. RTA and WTO membership have a positive effect on exports, with the former greater than the latter.

However, the results suggest a negative (and significant) relationship with voice and accountability, implying that an increase on this sub-indicator affects exports adversely. For the remaining WGIs (i.e. political stability, governance effectiveness, regulatory quality, rule of law, control of corruption), trade governance affects exports, especially for the Commonwealth exporters.

Results for the model augmented with FDI variables show a positive correlation between inward and outward FDI stocks and trade. On the IPR–trade relationship, the results suggest that higher payments and receipts from IPRs are positively correlated with exports. On trade facilitation and contract enforcement, we find that a reduction in the number of days and documents required promotes trade, suggesting that improved customs administration promotes trade between Commonwealth countries. Swifter contract enforcement is important for fostering intra-Commonwealth trade.

Important policy implications can be derived from this study to support Commonwealth countries in harnessing the 'Commonwealth Advantage'. Suggestions are as follows:

1. Increase the focus on governance and trade facilitation measures, as this will enable Commonwealth countries to stay ahead of the curve. This is all the more relevant given that there are structural changes and new emerging realities in trade, such as those related to global value chains and electronic commerce. Within the overall trade facilitation architecture, a related suggestion is the urgent need to address commercial infrastructure investments and to complement hard infrastructure with 'soft' infrastructure.
2. Foster the FDI climate such that the higher-income Commonwealth countries support low-income Commonwealth countries with FDI flows.
3. Finally, ensure the centrality of IPRs in development, and initiate specific measures to ensure Commonwealth countries' IPR regimes are aligned with international regulations.

5.1 Enhance the focus on trade governance and initiate trade facilitation

To stay on the trajectory of governance, the existing engagement (of Commonwealth countries) with trade governance should be fostered, at both the WTO and regional levels. Trade governance plays an important role in maintaining stable and predictable trade flows by providing a transparent regulatory framework to the advantage of all countries. Institutions, such as the WTO and RTAs, play an important role in shaping up international trade between countries. This is in line with evidence that countries benefit from quality governance institutions (see Rodriguez and Rodrik, 2001; Freund and Bolaky, 2008). While WTO agreements provide rules for the design and implementation of trade rules, RTAs continue to be the main instruments of liberalisation. Commonwealth countries should strive to increase integration of the international framework into regional liberalisation agendas.

To improve governance, it is suggested countries involve actors such as civil society, non-governmental organisations and trade unions, which can operate as vectors to transmit good governance into the framework. Thus, kick-starting policy reforms (for trade liberalisation) complemented by improved domestic regulatory governance will 'unpack' the positive effects of governance indicators to the fullest benefit of the Commonwealth countries.

Trade facilitation is key to efficient transport logistics and competitiveness, so enabling countries to improve transit times, cut down the number of documents required for exporting

and reduce costs will mean they are more able to remain ahead of the curve. In light of this, we suggest that addressing trade costs is important. The analysis shows that inefficient border management between Commonwealth countries and weak contract enforcement for intra-Commonwealth trade impedes participation in trade. Thus, improving the availability of trade-related information, simplifying and harmonising documents, streamlining procedures and using automated processes will reduce trade costs. There is evidence from low-income countries to this effect (Moïsé and Sorescu, 2013).

Other related suggestions include measures to expedite customs clearance for small shipments; removing limitations on express treatment for low-value goods; and streamlining documentation for the timely release of goods. Trade facilitation measures will allow small shipments to transit through borders faster, something that is increasingly important in the 'just-in-time' world of e-commerce, and allow countries to reap the benefit of increased trade. The Commonwealth countries will be competitive, given that more trade is being conducted online, which will mean an increasing number of small shipments and more products passing through customs individually rather than as part of larger cargo shipments from single large companies. The fast-evolving business landscape calls for flexible and simplified procedures for low-value products, and to adapt to structural changes in trade, such as the current prominence of global value chains and e-commerce.[10]

To benefit from the Commonwealth Advantage, countries must also realise the importance of continued investments in 'hard' and 'soft' infrastructure. Hard infrastructure physically connects the region and deepens integration by facilitating cross-border trade – hence policies and regulations that govern the movement of goods within countries and across borders deserve attention. Soft infrastructure harmonises and standardises trade procedures, such as customs and border management. It is, therefore, important that Commonwealth countries implement trade facilitation measures to streamline processes, harmonise rules, reduce transaction costs and strengthen institutions.

5.2 Promote FDI between Commonwealth countries, from high- to low-income countries

Results suggest that for Commonwealth countries FDI inflows are associated with higher exports. It is common knowledge that the benefits of FDI do not accrue automatically, and are uneven across countries. Since most FDI flows originate from the developed Commonwealth countries, effective steps should be taken to facilitate developing countries' access to international markets and technology. The World Investment Report for 2017 reports that the Commonwealth countries received more global FDI over 2014–16 and investment was concentrated in five Commonwealth member countries (the UK, Singapore, Canada, Australia and India, in that order), which accounted for 80 per cent of total Commonwealth FDI stock (UNCTAD, 2017). Intra-group investments remained steady, at 20 per cent of outward FDI stock in 2015, with the UK, Singapore, Canada and India major sources. Given that national policies and international investment architecture matter for attracting FDI, the Commonwealth countries should, as a group, aim for efficient investment promotion and facilitation provisions to target foreign investment for promoting sustainable development and trade.

In light of the FDI–trade link, host country policies should aim for a conducive environment to attract FDI. This implies that low-income Commonwealth countries must initiate reforms to establish a transparent, broad and effective enabling policy environment for investment and to build the human and institutional capacities necessary to be able to effectively implement national policies to promote FDI inflows. Steps could include strengthening national efforts to consolidate the rule of law and good governance, including by stepping up the fight against corruption and enhancing policy and regulatory frameworks (e.g. as regards competition, financial reporting and intellectual property protection), to foster a dynamic and well-functioning business sector. Such policies will benefit the climate for FDI through their effect on transparency.

We suggest that FDI inflows into low-income countries be part of the overall trade facilitation agenda such that higher-income Commonwealth countries provide development assistance to leverage public/private investment projects. This will support developing and low-income Commonwealth countries to integrate into rules-based international frameworks for investment. Another key and related recommendation relates to the availability of infrastructure in the host country to attract

FDI. Quality infrastructure will allow national enterprises to integrate the technological spinoffs from foreign-owned enterprises into their production processes, and facilitate technology diffusion, thus improving the productivity of domestic enterprises and making economic growth in Commonwealth countries more inclusive.

5.3 Ensure compliance with and promote a robust IPR framework

Findings suggest a positive correlation between IPRs and exports, such that innovation in importer countries leads to an increase in exports from Commonwealth countries and higher intra-Commonwealth trade. IPRs are critical for promoting research and development as these have a positive impact on innovation and commercialisation, which in turn generates competition. The adoption by developing Commonwealth countries of a robust IPR regime will attract significant new inward flows of technology that will lead to a blossoming of local innovation and cultural industries, and a faster closing of the technology gap between these and developed Commonwealth countries. In this context, it is important to undertake administrative capacity-building efforts to ensure IPRs remain at the heart of development and of the regimes of all Commonwealth countries, and in line with international regulations. The implementation of IPR provisions in low-income Commonwealth countries may require the adoption of new legislation, regulations and procedures, as well as accession to international conventions. The higher-income Commonwealth countries could support with capacity-building through the establishment of new IPR bodies, such as those that deal with the registration of patents, the granting of rights, rights management and so on. In addition, efforts should focus on the promotion of the second generation of multilateral treaties to ensure that IPR regimes continue to remain beneficial for Commonwealth exporters.

Notes

1 Li (2003) distinguishes between two main forms of governance: relation-based governance and rule-based governance. The two forms are distinguished by the differences in their information and (transaction) cost structures. Rule-based governance relies largely on impersonal and explicit agreements, whereas relation-based governance relies on more personal and implicit agreements, although agreements may be made (partially) explicit for third-party verification.

2 Sharma (2010, 2013) argues that the *adaptability* accorded to governance is the key competency of the regional integration mode of contracting in contrast with the global integration mode, which is less adaptable and more fixed in form.

3 To assess the validity of the index, Hamanaka et al. (2015) use data from the LPI, the WGIs, the Irregular Payment for Trade indicator from Global Competitiveness Index of the World Economic Forum and the Global Corruption Barometer.

4 See Kaufmann et al. (2010) for a detailed discussion of the data sources, aggregation method and interpretation of the indicators.

5 However, this cannot be taken as a diagnostic tool and needs to be supported by specific tools designed to perform that function.

6 See Wilson et al. (2003, 2005) for a detailed review of earlier work on single measures of trade facilitation.

7 This is in line with Rauch's (1999) classification of goods: organised exchange goods (those reference-priced commodities whose prices are quoted on an organised exchange), reference-priced goods (those goods whose reference prices are quoted only in trade publications) and differentiated goods, with the presumption that differentiated goods possess the most complex characteristics and hence are the most sensitive to contract enforcement issues.

8 This paper uses data from 2007 even though data from 2004 are available, as these are not comparable over time owing to changes in the data collection methodology. The contract enforcement regulation index consists of the following subcomponents: number of procedures in a court case involving bridging a contract and time in calendar days to resolve the dispute. The trade facilitation index uses number of days (documents) to import and export and overland transport costs.

9 For a review of the literature using gravity models applied to trade flows, see Anderson and Yotov (2010).

10 E-commerce has been growing steadily, doubling worldwide between 2013 and 2017, from US$1.1 billion to $2.4 billion (Suominen, 2015).

Appendix 1: List of countries (Commonwealth countries in bold)

Afghanistan
Albania
Algeria
Angola
Antigua and Barbuda
Argentina
Armenia
Australia
Austria
Azerbaijan
The Bahamas
Bahrain
Bangladesh
Barbados
Belarus
Belgium
Belize
Benin
Bermuda
Bhutan
Bolivia
Bosnia Herzegovina
Botswana
Brazil
Brunei Darussalam
Bulgaria
Burkina Faso
Burundi
Cambodia
Cameroon
Canada
Cape Verde
Cayman Islands
Central African Republic
Chad
Chile
China
Colombia
Comoros
Congo
Costa Rica
Croatia
Cuba
Cyprus
Czech Republic
Côte d'Ivoire
DPR Korea
Denmark
Djibouti
Dominica
Dominican Republic
Ecuador
Egypt
El Salvador
Equatorial Guinea
Eritrea
Estonia
Ethiopia
FS Micronesia
Faeroe Islands
Fiji
Finland
France
French Polynesia
Gabon
The Gambia
Georgia
Germany
Ghana
Greece
Greenland
Grenada
Guatemala
Guinea
Guinea-Bissau
Guyana
Haiti
Honduras
Hungary
Iceland
India
Indonesia
Iran
Iraq
Ireland
Israel
Italy
Jamaica
Japan
Jordan
Kazakhstan
Kenya
Kiribati
Kuwait
Kyrgyzstan
Lao PDR
Latvia
Lebanon
Lesotho
Liberia
Libya
Lithuania
Madagascar
Malawi
Malaysia
Maldives
Mali
Malta
Marshall Islands
Mauritania
Mauritius
Mexico
Mongolia
Morocco
Mozambique
Myanmar
Namibia
Nepal
Netherlands
New Caledonia
New Zealand
Nicaragua
Niger
Nigeria
Norway
Oman
Pakistan
Palau
Panama
Papua New Guinea
Paraguay
Peru
Philippines
Poland
Portugal
Qatar
Republic of Korea
Republic of Moldova
Russian Federation
Rwanda
St Kitts and Nevis
Saint Lucia
St Vincent and the Grenadines
Samoa
San Marino
São Tomé and Príncipe
Saudi Arabia
Senegal
Seychelles
Sierra Leone
Singapore
Slovakia
Slovenia
Solomon Islands
Somalia
South Africa
Spain
Sri Lanka
Sudan
Suriname
Swaziland
Sweden
Switzerland
Syria
TFYR of Macedonia
Tajikistan
Thailand
Togo
Tonga
Trinidad and Tobago
Tunisia
Turkey
Turkmenistan
Turks and Caicos Islands
Tuvalu
USA
Uganda
Ukraine
United Arab Emirates
United Kingdom
United Republic of Tanzania
Uruguay
Uzbekistan
Vanuatu
Venezuela
Viet Nam
Yemen
Zambia
Zimbabwe

Appendix 2: Variable definitions

Variable name	Description	Source
Ln GDP_exp	Exporting country GDP at current prices	WDI
Ln GDP_imp	Importing country GDP at current prices	
Ln pop_exp	Population of exporting country in number of inhabitants	
Ln pop_imp	Population of importing country in number of inhabitants	
Ln IPRp_exp (Ln IPRr_exp)	IPR payments done by exporting country (receipts)	
Ln IPRp_imp (Ln IPRr_imp)	IPR payments done by importing country (receipts)	
Ln pat_exp (imp)	Number of patent applications in exporting (importing) country	
Ln TM_exp (imp)	Number of trademark applications	
Ln DIST	Distance between capital cities	CEPII
Ln area_imp	Area of importer	
Ln area_exp	Area of exporter	
landlocked_imp	Dummy variable takes value of 1 if importing country is landlocked	
landlocked_exp	Dummy variable takes value of 1 if exporting country is landlocked	
CONTIG	Dummy variable takes value of 1 if partner countries share a border	
COMLANG	Dummy variable takes value of 1 if partner countries share a common language	
COLONY	Dummy variable takes value of 1 if partner countries have ever had a colonial relationship	
WTO	Takes the value of 1 if country i or country j is a WTO member and 2 if both are members	De Sousa (2012)
RTA	Dummy variable takes value of 1 if partner countries have an RTA	
Ln LPI	LPI	World Bank
Ln iFDI_exp (Ln iFDI_imp)	Inward FDI stock in exporting (importing) country	UNCTAD
Ln oFDI_exp (Ln oFDI_imp)	Outward FDI stock in exporting (importing) country	
Ln daysx_exp	Days for exports for exporting country	World Bank Doing Business
Ln daysm_imp	Days for imports for importing country	
Ln docx_exp	Number of documents for exports for exporting country	
Ln docm_imp	Number of documents for imports for importing country	
Ln costxusd_exp	Costs to export (in US dollars) for exporting country	
Ln costmusd_imp	Costs to import (in US dollars) for importing country	
Ln enforc_imp	Number of days needed to enforce contract in importing country	
Ln enforc_exp	Number of days needed to enforce contract in exporting country	
VAstd_exp	Exporting country's standardised value (0–100) of VA	World Bank WGI
PSstd_exp	Exporting country's standardised value (0–100) of PS	
GEstd_exp	Exporting country's standardised value (0–100) of GE	
RQstd_exp	Exporting country's standardised value (0–100) of RQ	
RLstd_exp	Exporting country's standardised value (0–100) of RL	
CCstd_exp	Exporting country's standardised value (0–100) of CC	
VAstd_imp	Importing country's standardised value (0–100) of VA	
PSstd_imp	Importing country's standardised value (0–100) of PS	
GEstd_imp	Importing country's standardised value (0–100) of GE	
RQstd_imp	Importing country's standardised value (0–100) of RQ	
RLstd_imp	Importing country's standardised value (0–100) of RL	
CCstd_imp	Importing country's standardised value (0–100) of CC	

Appendix 3: Summary statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
lnX	303,515	14.881	3.879	0	26.634
lnGDP_exp	601,209	23.567	2.472	16.328	30.451
lnGDP_imp	597,080	23.523	2.484	16.328	30.451
lnPCGDP_exp	601,209	8.081	1.605	4.284	11.541
lnPCGDP_imp	597,080	8.082	1.603	4.284	11.541
larea_imp	625,968	11.306	2.675	3.401	16.654
larea_exp	625,968	11.373	2.614	3.401	16.654
landlocked_imp	625,968	0.185	0.388	0	1
landlocked_exp	625,968	0.185	0.388	0	1
lnDIST_ij	625,968	8.757	0.827	0.651	9.899
CONTIG_ij	625,968	0.015	0.123	0	1
COMLANG_ij	625,968	0.158	0.364	0	1
COLONY_ij	625,968	0.117	0.322	0	1
RTA	625,968	0.089	0.285	0	1
WTO	653,484	0.536	0.499	0	1
VAstd_exp	527,929	55.344	25.543	0	100
PSstd_exp	488,785	61.909	22.263	0	100
GEstd_exp	524,119	49.592	22.020	0	100
RQstd_exp	524,313	55.067	21.875	0	100
RLstd_exp	527,929	53.261	23.121	0	100
CCstd_exp	524,119	41.388	23.695	0	100
lnifdist_exp	579,852	8.391	2.623	−1.347	15.415
lnifdist_imp	589,982	8.385	2.605	−1.347	15.415
lnofdist_exp	459,837	6.854	3.628	−4.605	15.649
lnofdist_imp	466,125	6.807	3.647	−4.605	15.649
lnIPRp_exp	404,407	17.307	3.328	−0.991	24.561
lnIPRp_imp	413,778	17.312	3.328	−0.991	24.561
lnIPRr_exp	308,557	16.340	3.786	4.804	25.576
lnIPRr_imp	315,899	16.344	3.786	4.804	25.576
lnpat_exp	307,704	7.064	2.273	1.099	13.623
lnpat_imp	311,585	7.059	2.282	1.099	13.623
lnTM_exp	420,149	8.677	1.781	0	14.430
lnTM_imp	420,658	8.703	1.787	0	14.430
llpi	157,620	−1.566	0.459	−5.389	−0.131
lndaysx_exp	138,276	2.849	0.493	1.792	4.625
lncostx_exp	138,276	6.890	0.395	5.966	8.269
lnndoc_exp	186,830	1.707	0.333	0.693	2.639
lnenforc_exp	200,018	6.386	0.425	4.787	7.487

Note: The definition of variables is provided in Appendix 2. For the governance indicators and the trade facilitation variables, only the summary statistics for the exporting countries are provided. Those coincide with the corresponding values for the importing countries, since there are no missing data for these indicators.

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