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Informal Cross-Border Trade in Africa

How Much? Why? And What Impact?

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ABSTRACT

Informal cross-border trade (ICBT) represents a prominent phenomenon in Africa. Several studies suggest that for certain products and countries, the value of informal trade may meet or even exceed the value of formal trade. This paper provides a review of existing efforts to measure informal trade. We list 18 initiatives aimed at measuring ICBT in Africa. The paper also summarizes discussions conducted with many stakeholders in Africa between December 2016 and May 2018 regarding the measurement, the determinants, and the implications of ICBT. The methodologies used to measure ICBT in Africa differ widely, but they do confirm that informal trade in Africa is both sizeable and volatile. Both evidence on the determinants of ICBT and discussions with stakeholders suggest that policies should aim to reduce the existing costs associated with formal trade and provide positive incentives for traders and producers to move into the formal economy in order to avoid the loss of economic potential stemming from informal trade.

Keywords: informal cross-border trade, smuggling, barriers to trade.

JEL Classification: F14, F15.

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ABBREVIATIONS AND ACRONYMS

ACTESA	Alliance for Commodity Trade in Eastern and Southern Africa
AU	African Union
BACI	Base pour l'Analyse du Commerce International
BCEAO	Banque Centrale des Etats d'Afrique de l'Ouest
BFAP	Bureau for Food and Agricultural Policy
BOU	Bank of Uganda
CEMAC	Economic and Monetary Community of Central Africa
CEPII	Centre d'Études Prospectives et d'Informations Internationales
CILSS	Comite Inter-étatique de Lutte contre la Sécheresse au Sahel
GDP	Gross Domestic Product
EAC	East African Community
EAGC	Eastern Africa Grains Council
EATIH	East Africa Trade and Investment Hub
ECENE	Enquête sur le Commerce Extérieur Non Enregistré
ECOWAS	Economic Community of West African States
FAO	Food and Agricultural Organization of the United Nations
FEWS NET	Famine Early Warning Systems Network
FSNWG	Food Security and Nutrition Working Group
FOB	Free on Board
ICBT	Informal Cross-Border Trade
ICTSD	International Centre for Trade and Sustainable Development
IFPRI	International Food Policy Research Institute
ILRI	International Livestock Research Institute
INSAE	Institut National de la Statistique et de l'Analyse Economique
ITC	International Trade Center
KNBS	Kenya National Bureau of Statistics
MINADER	Cameroon Ministry of Agriculture and Rural Development
NAMC	National Agricultural Market Council
NSA	Namibia Statistics Agency
NTB	Non-tariff Barriers
OECD	Organization for Economic Co-operation and Development
ReSAKSS	Regional Strategic Analysis and Knowledge Support System
SADC	Southern Africa Development Community
SPS	Sanitary and Phytosanitary Measures
TBT	Technical Barriers to Trade
UBOS	Uganda Bureau of Statistics
UNECA	United Nations Economic Commission for Africa
USAID	United States Agency for International Development
USDA	United States Department of Agriculture
WB	World Bank
WFP	World Food Programme
WTO	World Trade Organization

1. Introduction

Informal cross-border trade (ICBT) represents a prominent phenomenon in Africa. From a purely statistical point of view, its magnitude appears to be considerable. Several studies suggest that for certain products and countries, the value of informal trade may meet or even exceed the value of formal trade. For example, Ama, Mangadi, and Ama (2014) estimate that US$ 2.9 million per month is traded informally at a single border point between Zambia and Malawi (Mwami/Mchinji); formal trade at the same border point is estimated at US$1.6 million per month. Ogalo (2010) estimates that in 2006, the value of informal exports from Uganda to its neighboring countries stood at around 83 percent of the value of official exports to these countries over the same period. Recently, a survey of smuggling between Benin and neighboring countries concluded that smuggled products from Benin to Nigeria were estimated to be five times higher than officially recorded exports (INSAE, 2011 and 2012; Bensassi et al., 2016b).

Informal trade also makes up an important source of income for many poor rural African households. According to Afrika and Ajumbo (2012), informal cross-border trade provides a source of income for approximately 43 percent of Africa's population. Informal trade also plays an important role in terms of food security: in West Africa, a food-deficit region, informal cross-border trade in staple foods accounts for about 30 percent of total trade in the region (USAID, 2015). From discussion from various African stakeholders it also appears to fluctuate during periods of food crisis.

Informal trade is also known to have a significant gender bias: many informal traders are female. ICBT has the potential to create jobs in rural areas, particularly for women who may not have the time or support necessary to enter into formal employment channels (UNCTAD, 2018; Mbo'o-Tchouawou et al., 2016). In the SADC region, female traders account for approximately 70 percent of informal cross-border traders (United Nations Development Fund for Women, 2009). In Western and Central Africa, women account for nearly 60 percent of informal traders (Afrika and Ajumbo, 2012). OECD states that for women, "informal trade often constitutes the sole source of earnings and

economic empowerment." (Lesser and Moisé-Leeman, 2009, p.16). We also see high participation from women traders in many of the country-level surveys reviewed later in this paper.

Because ICBT appears to be so large and is heavily linked to food security and development, it is important to obtain accurate measurements of the phenomenon. First, more accurate trade data can improve the statistical measurements of balance of payments and external accounts, improving trade measurement and modeling on a global scale. Second, capturing ICBT can facilitate the development of more accurate domestic food balance sheets. Third, measurement of this type of trade can provide a more accurate picture of important aspects related to informal trade, including information on informal labor markets and movement patterns of staple foods during periods of crises. Each of these provides the opportunity for better policymaking using reliable and accurate data.

In this paper, we offer: (i) a review of literature on ICBT, with a particular focus on Africa; (ii) a review of recent or existing initiatives aimed at measuring ICBT in Africa; (iii) a synthesis of discussions with many stakeholders regarding the measurement, the determinants, and the implications of ICBT between December 2016 and May 2018.[1]

[1] These discussions come from three workshops (Nairobi, Kenya, December 14th, 2015; Geneva, Switzerland, June 10, 2016; Addis-Ababa, Ethiopia, December 7, 2017) and five site visits (from May 9 to May 20, 2016 in Pretoria, South Africa, Arusha and Dar-Es-Salaam, Tanzania, and Addis Ababa, Ethiopia; from August 29 to August 30, 2016 in Dakar, Senegal; from October 10 to October 13, 2016 in Accra, Ghana and Ouagadougou, Burkina Faso; from October 26 to November 1, 2016 in Nairobi, Kenya, Kampala, Uganda, and Lusaka, Zambia; from April 25 to April 27, 2018 in Ouagadougou, Burkina Faso). We met experts from the Alliance for Commodity Trade in Eastern and Southern Africa (ACTESA), the African Union (AU), the Bank of Uganda (BoU), the Banque Centrale des Etats d'Afrique de l'Ouest (BCEAO), Borderless Alliance, the Bureau for Food and Agricultural Policy (BFAP), the Central statistics agency from Ethiopia, the Centre d'Etudes Prospectives et d'Informations Internationales (CEPII), the Comite Inter-étatique de Lutte contre la Sécheresse au Sahel (CILSS), CUTS International Accra, the Common Market for Eastern and Southern Africa (COMESA), the Eastern African Community (EAC), the Eastern Africa Grains Council (EAGC), the European Centre for Development Policy Management (ECDPM) , the Economic Community of West African States (ECOWAS), the Famine Early Warning Systems Network (FEWSNet), the Food and Agriculture Organization of the United Nations (FAO), the Ghana Ministry of Food and Agriculture Veterinary Services, Le Hub Rural, the International Centre for Trade and Sustainable Development (ICTSD), the Intergovernmental Authority on Development (IGAD), the Institut National de la Statistique et de l'Analyse Economique (INSAE) from Benin, the International Trade Centre (ITC), the National Agricultural Market Council (NAMC), the Regional Strategic Analysis and Knowledge Support System for Eastern and Central Africa (ReSAKSS-ECA), the ReSAKSS-Southern Africa (ReSAKSS-SA), the South Africa Department of Agricultural Economics, the Southern African Development Community (SADC), the Uganda Bureau of Statistics (UBOS), the Uganda Customs Department, the Uganda Ministry of Trade, the United States Agency for International Development (USAID) missions in Africa, the USAID East Africa Trade and Investment Hub (EATIH), the United States Department of Agriculture (USDA), the United Nations Economic Commission for Africa (UNECA), the University of Pretoria, the University of Paris-Dauphine, the World Bank (WB), and the World Trade Organization (WTO).

We conclude that due to ICBT's magnitude and the potential implications that it can have on food security and safety, tariff revenues, and poor households' income, the approach to ICBT taken by governments and regional institutions in Africa has changed significantly since 2005. However, while initiatives for measuring ICBT in Africa are growing in number and scope, they remain fragmented and not systematic. A coordination effort remains a priority. ICBT may have important positive effects on poor households in terms of income and food security in the short term, but it could remain an obstacle to investment and economic growth in the long term. Governments and regional institutions have tended to adopt a positive approach when trying to *formalize* informal trade, that is, by encouraging informal traders to trade legally and declare their merchandise, in particular by reducing the cost of formal trade.

The paper is organized as follows. Section 2 provides an overview of what ICBT is and our definition of the phenomenon for this paper. Section 3 provides a review of recent studies that have attempted to quantify the magnitude of informal trade in Africa. In addition to their regional differences, the studies differ markedly in methodology and scope. They include survey-based studies and studies based on econometric modeling using formal trade data. We discuss the findings in detail to provide a better understanding of their strengths and weaknesses. Section 4 examines the factors that encourage traders to eschew formal trade for informal cross-border trade and discusses the impact of ICBT on food security, country GDP, and other livelihood measures. Policy implications are discussed in Section 5, and Section 6 concludes.

2. Defining Informal Cross-Border Trade

What is ICBT exactly? Part of the problem in obtaining accurate and comparable measurements is having a precise definition. The OECD, from Lesser and Moisé-Leeman (2009), defines ICBT as "trade in *legitimately* produced goods and services, which escapes the regulatory framework set by the government, as such avoiding certain tax and regulatory burdens" (Lesser and Moisé-Leeman, 2009, p. 9). Afrika and Ajumbo (2012) define it as "trade in processed or non-processed merchandise which may be legal imports or exports on one side of the border and illicit on the other side and vice-versa, on

account of not having been subjected to statutory border formalities such as customs clearance." (Afrika and Ajumbo, 2012, p. 2)

Overall, the primary objective of ICBT is evasion of payments of charges, duties, and other transaction costs. ICBT can be practiced by formal or informal traders and companies. Because there can be different practices behind the phenomenon of ICBT, Lesser and Moisé-Leeman (2009) makes the following three distinctions between types of informal trade:

A. informal unregistered traders or firms operating entirely outside the formal economy (ICBT definition A);
B. formal (registered) firms fully evading trade-related regulations and duties by, for instance, avoiding official border crossing points (ICBT definition B);
C. formal (registered) firms partially evading trade-related regulations and duties by resorting to illegal practices, such as under-invoicing or declassifying (ICBT definition C). (Lesser and Moisé-Leeman, 2009, p.10)

We will follow this definition and distinguish between these three types of ICBT throughout this paper.

ICBT definition B corresponds to the term commonly called smuggling. Some authors (Martin and Panagariya, 1984, for example) consider ICBT definition C to also mean smuggling. According to these authors, smuggling is defined as international trade by firms or individuals that either partially or fully evades trade regulations and border duties, either by avoiding official border crossing posts (full evasion) or by resorting to illegal means like underinvoicing, misclassification, underpricing, etc. (partial evasion). In the theoretical literature, the full-evasion type of smuggling is also called the Bhagwati-Hansen type of smuggling (Bhagwati and Hansen, 1973), while the partial evasion version is called the Pitt type of smuggling (Pitt, 1981). Pitt considers legal trade to be a camouflage activity for illegal trade. In this paper, we will reserve the term of smuggling for full evasion, or ICBT definition B.

3. The Measurement of ICBT

Many studies have evaluated the magnitude of ICBT in Africa. Their methodologies differ, in part, due to how ICBT is defined in the study.

First, surveys can be conducted "in the field", i.e., at border points by interviewers questioning informal traders. This methodology is often aimed at measuring the importance of ICBT definition A, i.e., "informal unregistered traders or firms operating entirely outside the formal economy." (Lesser and Moisé-Leeman, 2009, p.10)

Second, researchers have conducted econometric studies based on formally reported 'mirror' trade flows. These studies compare a trade flow reported by the exporting country with the same flow reported by the importing country. Bhagwati (1964) suggests that the discrepancy between a country's reported imports and the corresponding exports reported by its trading partners may be explained by illegal practices at the border; thus, this methodology is often aimed at measuring ICBT definition C: "formal (registered) firms partially evading trade-related regulations and duties by resorting to illegal practices, by for example under-invoicing or declassifying" (Lesser and Moisé-Leeman, 2009, p.10). Using this methodology to examine intra-Africa trade, however, remains questionable; the methodology can be difficult to implement in this region, primarily because country-level official customs data are frequently unreliable or unreported.[2]

Third, studies can be aimed at evaluating ICBT definition B: "formal (registered) firms fully evading trade-related regulations and duties by for instance avoiding official border crossing points." (Lesser and Moisé-Leeman, 2009, p.10). For example, a study by the Institut National de la Statistique et de l'Analyse Économique (INSAE) based in Benin collected data on informal cross-border trade at many (unofficial) border points over a short period of time in 2011. This survey, the Enquête sur le Commerce Extérieur Non Enregistré (ECENE), covered only illegal border posts and thus provides a

2 Moreover, there can still be discrepancies even if both sides of the border have proper reporting systems. Goods may be in transit in between reporting years for instance. This may be less important for African trade, but globally there is quite an amount of merchandise on ships for weeks or months and with ships navigating under flags of countries different from those exporting or importing.

direct measurement of smuggling. Similarly, Golub and Mbaye (2009) study trade between The Gambia and Senegal and provide crude estimates of smuggling for a dozen of products based on official data on trade, re-exports, and transit and from price differences and trade taxes.

Table 1 lists recent studies and initiatives targeting the measurement of ICBT in Africa. Most of the surveys focus on a limited timeframe—typically based on one or two years of data. The two first surveys listed, one initiative in Uganda and the other in Rwanda, are worth noting because of their relative longevity (one operated continuously since 2005, the other since 2009). We will cover these in detail in the next two sub-sections. .

Table 1. Studies measuring ICBT in Africa

Type of study	*Country / region at origin*	*Name of the initiative*	*Operated by*	*Funded by*	*Borders covered*	*Years covered*	*Products covered*	*Type of ICBT*
Survey	Uganda	ICBT Survey	Uganda Bureau of Statistics	Bank of Uganda	Uganda with South Sudan, Congo RD, Rwanda, Tanzania and Kenya	2005-2017	All goods	ICBT Def. A
Survey	Rwanda	ICBT Survey in Rwanda	National Bank of Rwanda, National Institute of Statistics of Rwanda	Government of Rwanda	Rwanda with Burundi, DR Congo, Tanzania and Uganda	2009-2017	All goods	ICBT Def. A
Interviews	DR Congo	Timber Trade in Africa's Great Lakes	South African Institute of International Affairs	na	DR Congo with Uganda, Burundi, Tanzania and Kenya (through Uganda)	November 2010-February 2012	timber	ICBT Def. A
Survey	Benin	ECENE	Benin INSAE	Ministere du Developpement, de l'Analyse Economique et de la Prospective du Benin et Delegation de l'UE au Benin	Benin with Togo, Nigeria, Niger and Burkina	2010 / 2011	all merchandises	ICBT Def. B
Estimation	The Gambia/Senegal	Golub and Mbaye (2009)	World Bank	The World Bank, Agence Francaise du Dévelopement (AFD)	The Gambia with Senegal	2006	Agricultural (unprocessed and processed) goods	ICBT Def. B
Survey	Namibia	Informal CrossBorder Trade Survey (ICBTS)	Namibia Statistics Agency	Bank of Namibia - Namibia Ministry of Finance	Namibia with Angola, South Africa and Zambia	2014-2015	all merchandises	ICBT Def. A
Survey	Cameroon		Cameroon Ministry of Agriculture and Rural Development	Cameroon Ministry of Agriculture and Rural Development	Cameroon with Central African Republic, Chad, Gabon, Congo and Equatorial Guinea	2008	agricultural and horticultural commodities	ICBT Def. A

Table 1. Continued

Type of study	*Country / region at origin*	*Name of the initiative*	*Operated by*	*Funded by*	*Borders covered*	*Years covered*	*Products covered*	*Type of ICBT*
Meta-Survey	Eastern Africa	East Africa Cross-border Trade	Data provided by the EAGC, FEWS NET, FAO, NBR and WFP	USAID, FAO, FEWSNet, Ministère des Affaires Étrangères de la France	ICBT between Tanzania, Burundi, Rwanda, Uganda, Kenya, Somalia, Djibouti, Ethiopia, Sudan, and South Sudan and DRC	2010-2014	Staple food commodities: Maize grain, Rice grain, Maize and wheat flour, Beans and pulses, Cassava, Onions, Tomatoes, Live bovine animals, Milk and cream, Bovine meat, Fish and crustaceans	ICBT Def. A
Meta-Survey	Eastern and Southern Africa	Informal Cross-border Trade In Eastern And Southern Africa	secondary data on ICBT in ESA region collected by UBOS, EAGC, FEWS NET and ACTESA.	USAID, ILRI, ReSAKSS	ICBT between Burundi, Democratic Republic of Congo, Djibouti, Ethiopia, Kenya, Malawi, Rwanda, Uganda, Tanzania, Zambia and South Sudan			
Survey	Southern Africa	Cross-border Food Trade Monitoring Initiative	ACTESA	ACTESA, WFP, FEWSNET	ICBT between Malawi, Mozambique, Zimbabwe and Zambia.	2011-2017	Food products	ICBT Def. A
Survey	Kenya	Informal Cross-border Trade Survey	KNBS	KNBS	Kenya's ICBT with Uganda, Tanzania, Somali and Ethiopia	2nd quarter of 2011	all merchandise	ICBT Def. A
Survey	Tanzania		USAID Africa Bureau	USAID	Tanzania's ICBT with Kenya, Malawi, Zambia, DR Congo, and Uganda	1995-96	all merchandise	ICBT Def. A
Survey	Eastern and Southern Africa	Ackello-Ogutu (1996)	Technoserve, Kenya	USAID	Kenya-Uganda border; Tanzania with Malawi, Zambia, Congo RD and Uganda; Malawi with Mozambique, Tanzania and Zambia; Mozambique with South Africa, Swaziland, Malawi, Zimbabwe, Zambia and Tanzania	1994-95	Some agricultural food products and some manufactured goods	ICBT Def. A

Table 1. Continued

Type of study	*Country / region at origin*	*Name of the initiative*	*Operated by*	*Funded by*	*Borders covered*	*Years covered*	*Products covered*	*Type of ICBT*
Econometrics of mirror trade data	Kenya, Mauritius and Nigeria	Bouet and Roy (2010)	IFPRI		Kenya, Mauritius and Nigeria	2001, 2004	all goods	ICBT Def. C
Econometrics of mirror trade data	75 countries	Jean and Mitaritonna (2010)	CEPII	European Commission	Burundi, Cameroon, Gabon, Kenya, Madagascar, Malawi, Mauritania, Mauritius, Morocco, Seychelles, Tanzania, Tunisia	2001, 2004	all goods	ICBT Def. C
Econometrics of mirror trade data	Mozambique	Von Dunem and Arndt (2009)			Mozambique	2003	all goods	ICBT Def. C
Econometrics of mirror trade data	Kenya/Tanzania vs. Kenya/UK	Levin and Windell (2014)		SIDA-U-Forsk	Kenya/Tanzania	2000	all goods	ICBT Def. C

Note: EAGC for East Africa Grain Council, FEWS NET for Famine Early Warning Systems Network, FAO for Food and Agricultural Organization, NBR for National Bank of Rwanda, and WFP for World Food Program.

Survey-based studies

A recent study on the measurement of cross-border trade by USAID (2015) notes the largely fragmented nature of current research. The study points out that while primary data on formal and informal trade are being collected for targeted corridors and value chains in West Africa (in particular by CILSS – see below), formal cross-border trade data for East and Southern Africa are being collected and reported by national statistical agencies. Primary data collection on informal trade in staple foods is occurring in East Africa, but it is fragmented geographically and a centralized platform with publicly available data does not exist. In Southern Africa, a methodology has been developed for collecting informal trade data, but data collection activities have not yet commenced. There have been several individual country-level programs focused on survey data collection; in the following sub-sections, we will focus primarily on initiatives in Uganda and Rwanda, with a brief overview of other ongoing and recent initiatives throughout Africa.

Uganda[3]

Surveys of ICBT in Uganda started in 2005 and are still ongoing. They are operated and financed by the Uganda Bureau of Statistics (UBOS) and the Bank of Uganda (BOU), which publish an Informal Cross-border Trade (ICBT) Survey report every year.

According to the definition used in these studies, ICBT refers to "trade transactions between residents and non-residents across the economic boundaries of two or more countries that are not recorded by Customs Authorities" (UBS and BOU, 2013, p. v). This definition is largely consistent with ICBT definition A and the methodology used to measure it confirms this point of view.

The UBOS survey aims to assess the volume and value of informal trade between Uganda and its neighbors (DR Congo, Kenya, Rwanda, South Sudan, and Tanzania). The goal is to provide an estimation of informal cross-border (ICB) exports, primarily of agricultural and food commodities. Uganda has clear regional patterns, with high levels of trade (imports and exports) with Kenya and the DRC. The country also

[3] We give detailed results of ICBT in Uganda since this is the most successful effort to measure ICBT definition A in Africa.

exports large amounts to South Sudan, where demand for food imports is high because of low agricultural productivity, exacerbated by drought and political unrest.

Because of the magnitude of informal trade between these countries, accurate measurement of ICBT has important implications for Uganda. First, more accurate trade data can improve the statistical measures of balance of payments and external accounts. Second, capturing ICBT facilitates the development of more accurate domestic food balance sheets. Third, the surveys address recommendations by the Eastern African Community (EAC) Council for regular monitoring of ICBT within the region.

By 2013, the Uganda survey covered 19 border posts and four bus terminals; one to two enumerators were stationed at each point to observe trade and, when necessary, to interview traders, clearing agents, and revenue officers. The selection of the monitoring sites was primarily based on the significance of trade flows through the border post. In a recent annual report (2014), UBOS and BoU recognized that this survey does not cover all border points and as such likely underestimates total informal trade, but it was felt the underestimation was likely minimal.[4]

Collected data at the monitored posts include:

i. merchandise into/out of the country carried on foot, bicycles, push carts, motorcycles, vehicle, wheel chairs, donkeys, and boats, both in large and small quantities, that is not recorded by customs authorities, and

ii. undeclared or under-declared merchandise from traders on formal customs declaration documents.

Data collection does not cover:

i. goods properly (100 percent) declared and verified by customs officials on declaration documents;

ii. transit[5] goods into and out of the country at any border post being monitored; and

[4] The report notes that the survey is only conducted between 7 am and 6 pm and thus may miss trade occurring outside of those hours.

[5] Transit goods are defined as goods transported through country A but traded from country B to a third, and final, country C.

iii. goods smuggled (consistent with OECD definition B) into or out of the country (including night-time cross-border transactions).

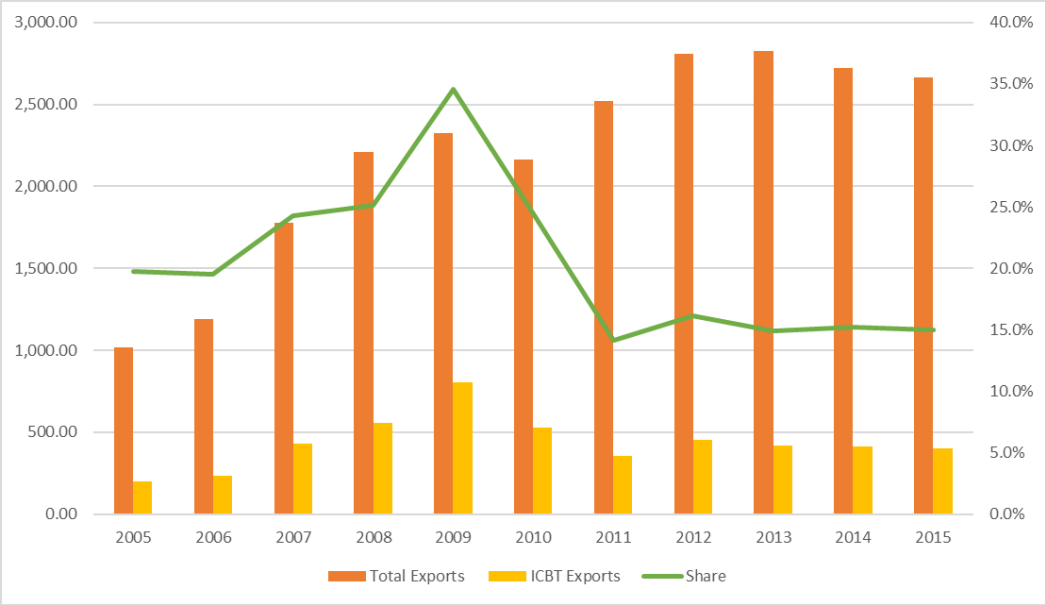
Exports are valued free on board (FOB), i.e., without inclusion of taxes, transportation, and insurance costs, while imports are valued CIF, i.e., cost of insurance and freight included. Data collection is limited to two weeks per month to reduce costs, with the weeks randomly chosen.

What is the importance of ICBT in Uganda? On the export side, it is significant. Figure 1 indicates the value of total (formal + informal) exports and of informal exports from Uganda between 2005 (starting date of the initiative) and 2015, as well as the share of informal exports in total exports. Between 2005 and 2015, informal exports represent from 14.1 percent to 34.5 percent of total Ugandan exports.

On the import side, the importance of ICBT appears to be marginal. Figures 1 and 2 indicate the value of total (formal + informal) exports (Figure 1) and imports (Figure 2) compared to informal flows to and from Uganda between 2005 (the starting date of the initiative) and 2014.[6] Overall, we can see that while Uganda is generally importing more than it exports, the share of informal exports in total exports is very high. This appeared to be particularly true during the periods of food crisis between 2007 and 2009. After leveling off in 2010, the share of informal exports has remained at approximately 15 percent of total exports in recent years, signaling a generally large presence of ICBT.

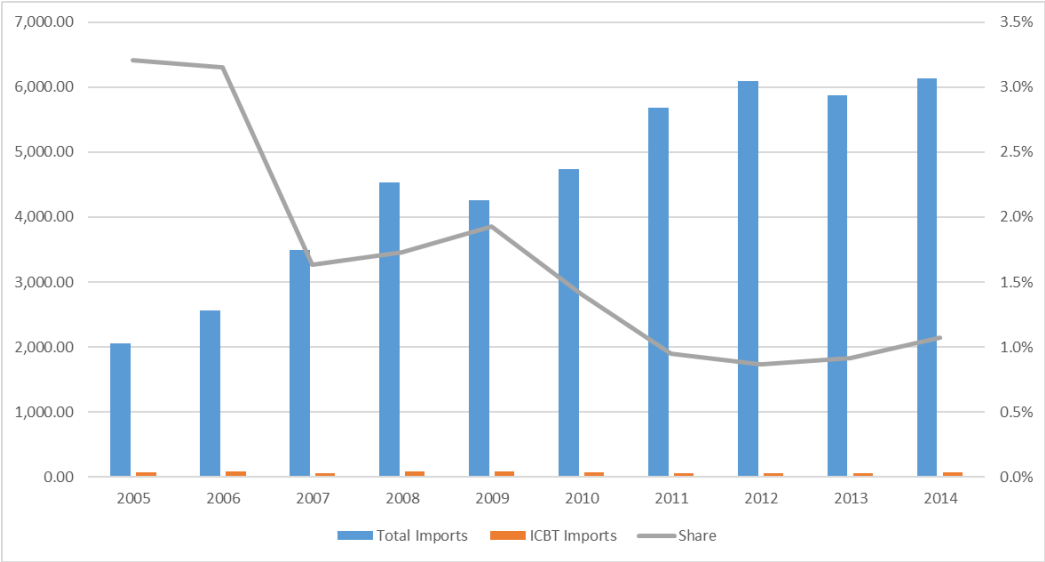
[6] As of June 20, 2017, statistics on informal imports for 2015 have not been released.

Figure 1. Total and informal exports from Uganda – 2005-2015 – US$ millions and percent



Source: UBOS, BoU, and authors' calculation

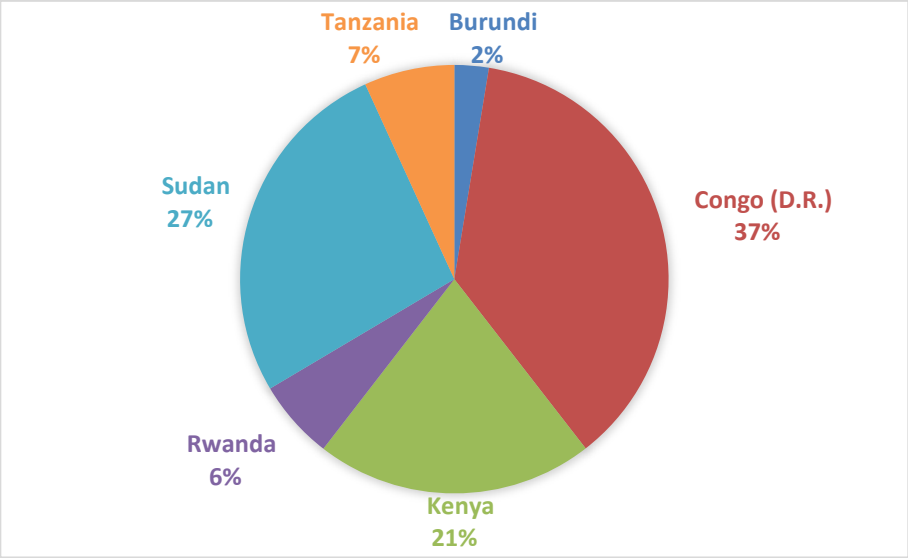
Figure 2. Total and informal imports of Uganda – 2005-2014 – US$ millions and percent



Source: UBOS, BoU, and authors' calculation

Figure 3 and Figure 5 indicate the geographic structure of Uganda's informal exports and informal imports, respectively. Most of Uganda's informal exports go to DR Congo, Kenya, and South Sudan (these three countries represent 85 percent of Uganda's total informal exports). As already stated, Uganda's informal imports are relatively small and originate mostly from DR Congo and Kenya (82 percent of total informal imports).

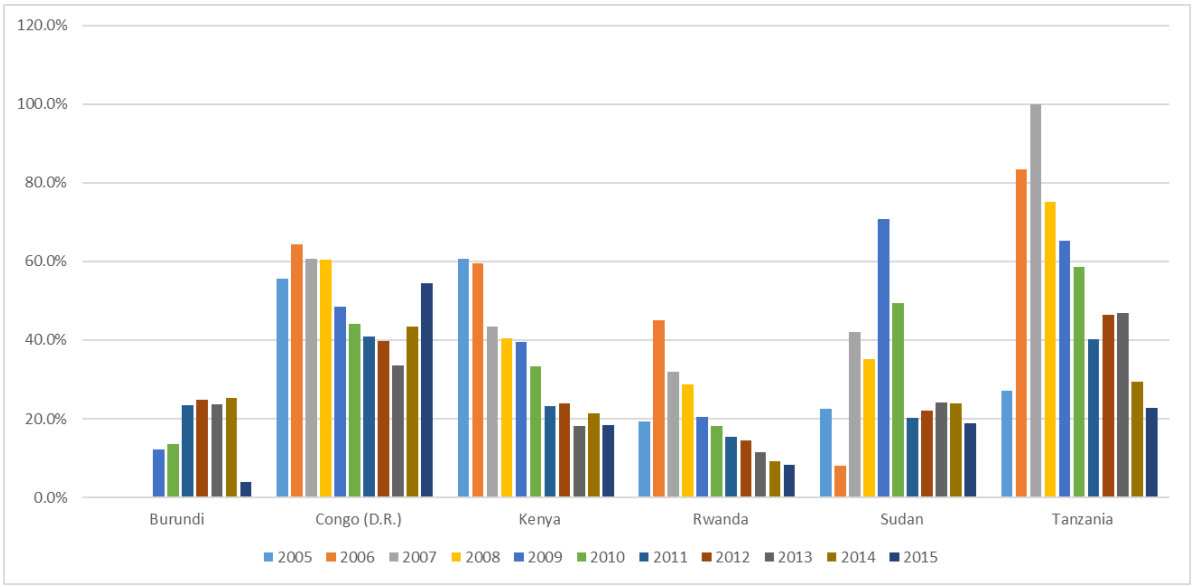
Figure 3. Geographic structure of Uganda's informal exports – Average 2013-2015



Source: UBOS, BoU, and authors' calculation

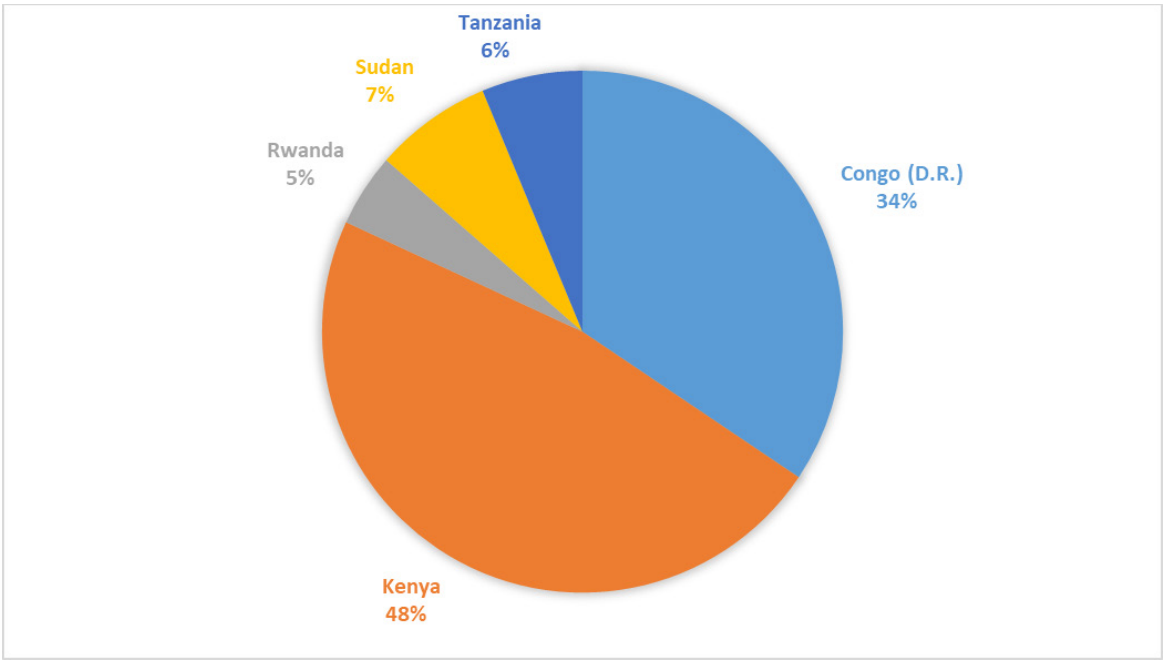
Figure 4 and Figure 6 respectively present the evolution of the ratio of Uganda's informal exports over total exports by destination over the 2005-2015 period and the ratio of Uganda's informal imports over total imports by origin over the 2005-2014 period. These graphs highlight two interesting facts. First, informal trade can be very high, even close to 100 percent (see informal exports to Tanzania and informal imports from Congo and Sudan). Second, informal trade is volatile. A glance at annual reports (UBOS and BoU, 2007; 2008; 2009; 2010; 2013; 2014) indicates that either specific events external to Uganda or internal domestic events can significantly affect the level of informal trade. Such events include the creation of South Sudan in 2011, the surge in the number of returnees due to civil wars in neighboring DR Congo, or the inclusion of new crossing points and/or bus terminals.

Figure 4. Ratio Uganda's informal exports over total exports by destination – 2005-2015



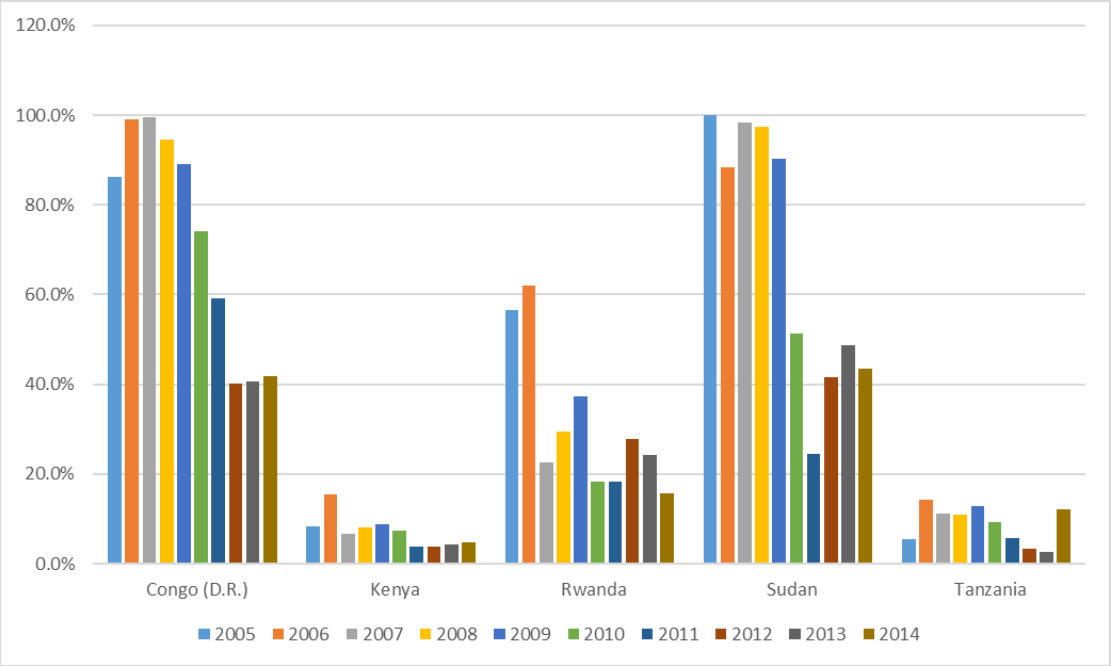
Source: UBOS, BoU, and authors' calculations.

Figure 5. Geographic structure of Uganda's informal imports – Average 2012-2014



Source: UBOS, BoU, and authors' calculations.

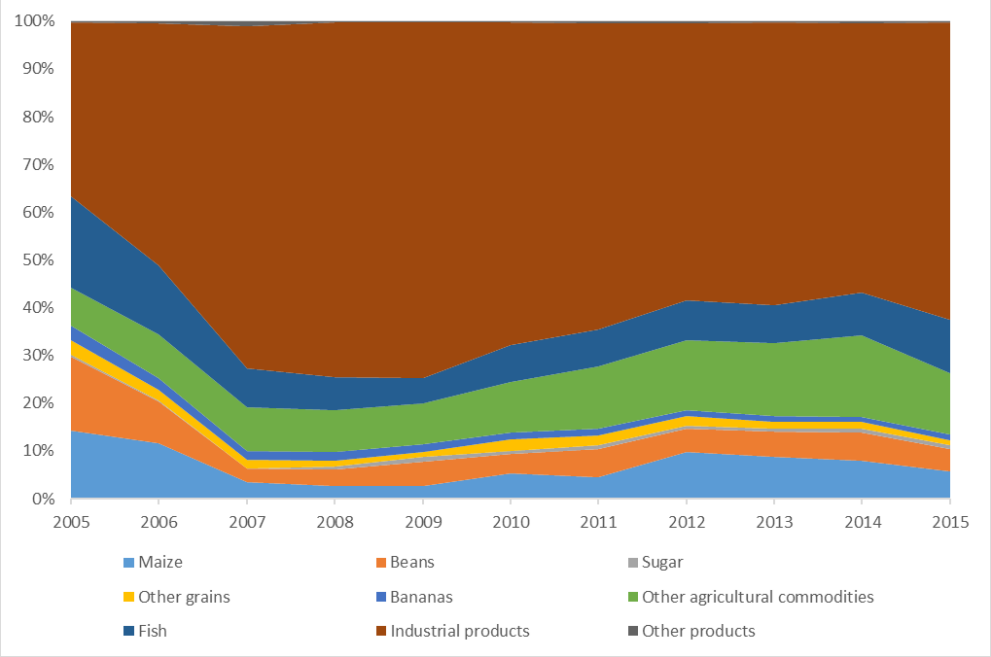
Figure 6. Ratio Uganda's informal imports over total imports by origin – 2005-2014



Source: UBOS, BoU, and authors' calculations.

Figure 7 presents the commodity structure of Uganda's informal exports. Industrial goods (such as shoes, clothes, sandals, bicycles parts, and motorcycle parts) represent around 60 percent of total informal exports, while agricultural goods, including fish, represent around 40 percent. Informal fish exports as a share of total fish exports are particularly high (frequently more than 70 percent); in addition, informal exports of beans are frequently more than 60 percent of total bean exports and informal exports of maize are around 40 percent of total maize exports.

Figure 7. Commodity structure of Uganda's informal exports –2005-2015



Source: UBOS, BoU, and authors' calculation

Uganda's informal imports are relatively evenly shared between raw agricultural commodities (e.g., rice, coffee, bananas, and beans) and more processed products (e.g., wheat flour, cooking oil, and palm oil).

In addition to trade values, enumerators also collect information about the mode of transport used. On the export side, vehicles represent, by far, the top mode of transportation; vehicles account for more than 60 percent of total informal exports by value, followed by bicycle, push cart, motorcycle, and human transport. On the import side, bicycles are the primary mode of transporting goods, followed by vehicles.[7]

Rwanda

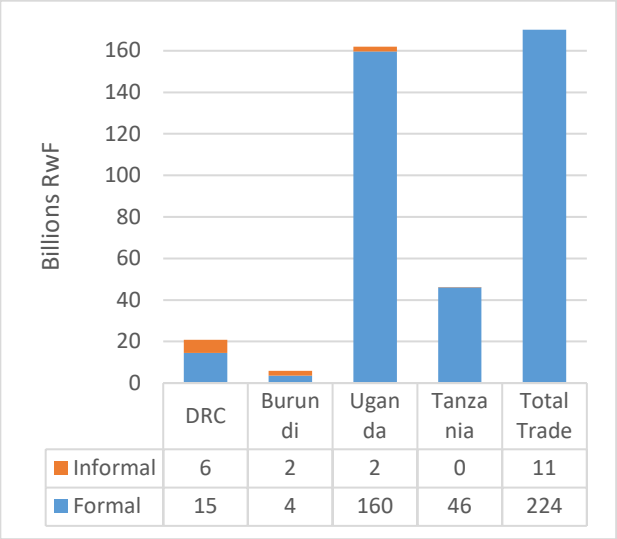
In 2009, the Government of Rwanda initiated a pilot survey of ICBT with enumerators reporting on a small number of border crossings. Expanded surveys were conducted after the pilot in 2009, covering seven months in 2010 and 10 months in 2011. Since 2012, the survey has been carried out on a regular basis, covering 53 border crossings along the four neighboring countries (Burundi, DR Congo, Tanzania, and Uganda).

[7] Data concerning mode for transportation are for the 2011-2014 period and are issued from UBOS and BoU (2014).

Rwanda's Ministry of Trade and Industry recognizes that the data collected is imprecise due to the collection difficulties[8] met by enumerators and that large differences in the value of trade between two consecutive data sets could be either the sign of increased informal trade or the sign of improvements in the measurement of ICBT.

In 2014, Rwanda's informal exports to these neighboring four countries accounted for 59 percent of total exports to these countries (Figure 9), whereas informal imports from these four countries accounted for only 4 percent of total imports from those countries (Figure 8). Rwanda's informal exports to DR Congo are particularly large, accounting for almost one-third of total (informal and formal) exports to these four countries in 2014.

Figure 8. Rwanda's formal and informal imports - RWF Millions - 2014



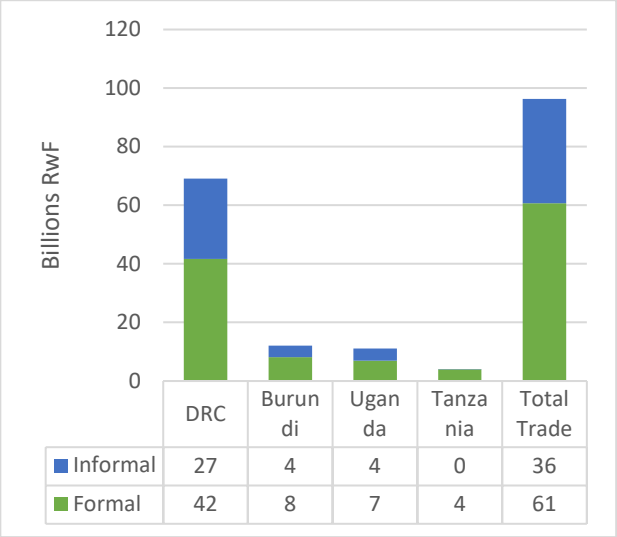
	DRC	Burundi	Uganda	Tanzania	Total Trade
Informal	6	2	2	0	11
Formal	15	4	160	46	224

Source: Charalambides and Parker, 2016

The major products exported by Rwanda through informal channels are live bovine cattle, maize flour, paraffin, and bovine meat. The main products imported by Rwanda through informal channels are coffee, sorghum, minerals such as coltan,[9] and whiskies.

[8] These difficulties are not explicitly mentioned in the report from the Rwanda's Ministry of Trade and Industry.
[9] Coltan is a metallic ore from which niobium (used in superconducting materials) and tantalum (used in electronic products) are extracted.

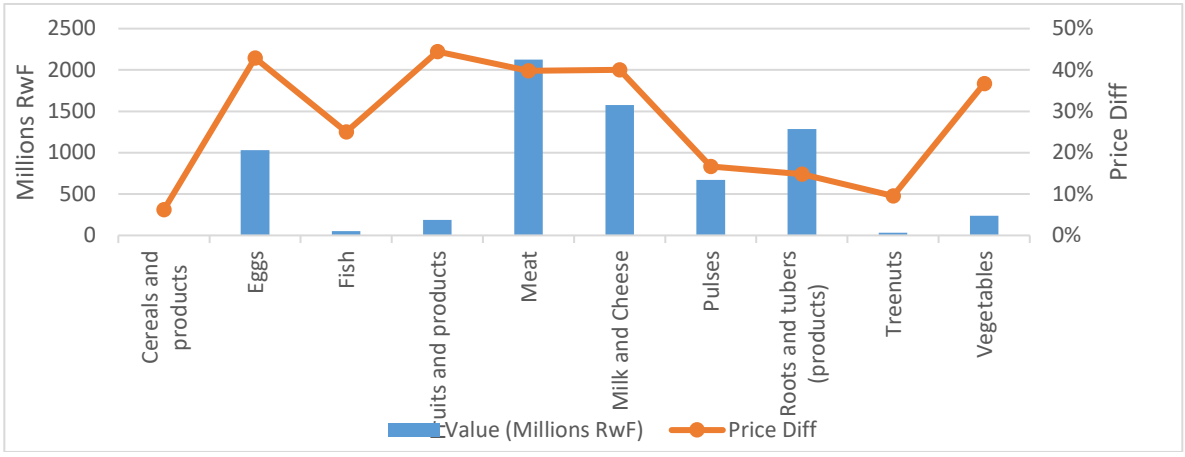
Figure 9. Rwanda's formal and informal exports - RWF Millions - 2014



Source: Charalambides and Parker, 2016

An interesting element of this survey is that enumerators also record price levels on both sides of the border for both DR Congo and Uganda. There is evidence that informal trade is high when price differences are large; for example, for the main consumer basket categories, prices are generally higher in DR Congo and exports from Rwanda to this country are substantial. Correlation between informal trade from Rwanda to Uganda and price differences is less obvious: price differences are smaller and consumer goods are often cheaper in Uganda.

Figure 10. Price differences and exports from Rwanda to Congo R.D. (Goma) - 2014



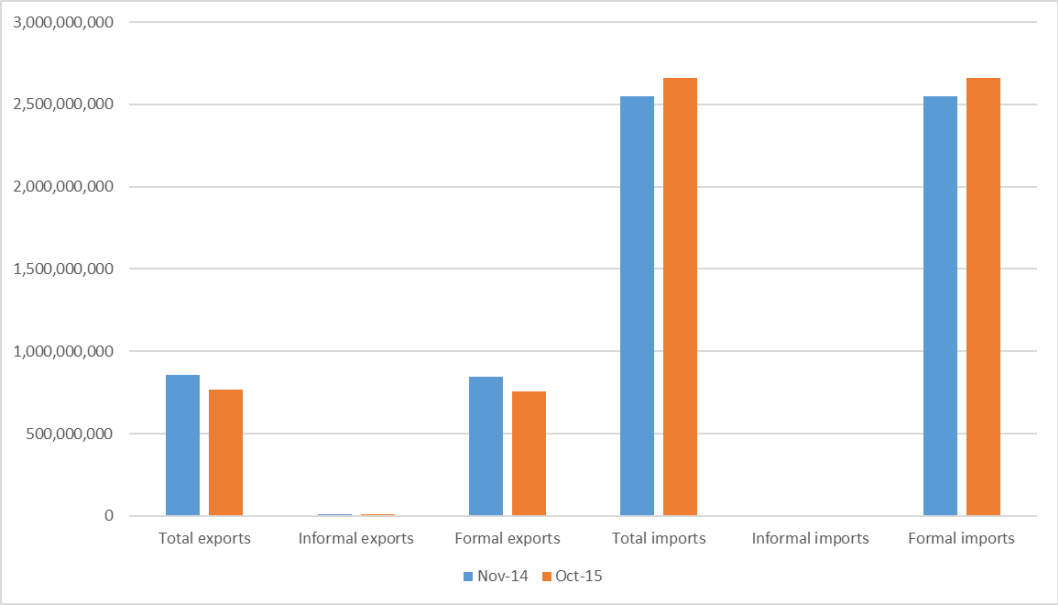
Source: Charalambides and Parker, 2016

Namibia

The Namibia Statistics Agency (NSA) conducted a survey on ICBT for the first time in 2014 and renewed the initiative in 2015. This survey covers small-value transactions (below N$ 5,000, equal to about US$ 386 as of June 2017) in merchandise across selected border posts. It covers five official border posts and one unofficial border post. These posts were selected because of the importance of trade flows. Data was collected only for November 2014 and September 2015, every day from 8 am to 5 pm.

Figure 11 indicates the level of formal and informal trade in Namibia as measured by this initiative. Informal trade in proportion to total trade is very small, measured at less than 0.4 percent in both years.

Figure 11. Namibia's formal and informal trade – November 2014 and September 2015



Source: Namibia Statistics Agency, 2015

Namibia's informal exports go mostly to Angola (accounting for 91 percent of total informal exports in November 2014 and 83 percent in September 2015), whereas imports were mostly from South Africa in November 2014 (accounting for 58 percent of total informal imports) and Angola in September 2015 (accounting for 64 percent of total informal imports). Namibia's informal exports consist mostly of

meat, fish, building materials, toiletries, clothing and jewellery, vehicles parts, and bicycles. Namibia's informal imports consist mostly of alcoholic beverages and tobacco and vegetables.

The limited nature of the survey precludes broader generalization regarding import and export trends throughout the year; that is, we do not know whether these months are 'representative' of informal trade, as we have seen in other studies that informal trade can fluctuate quickly. The number of collection points in these studies is also limited and may not cover key informal crossings.

Cameroon

A 2010 study by Nkendah includes all three components of ICBT as defined by Lesser and Moisé-Leeman (2009) but focuses only on agricultural and horticultural commodities traded in 2008 between Cameroon and its CEMAC neighbors (Central African Republic, Chad, Congo, Equatorial Guinea, and Gabon). The data collection effort was initiated by the Ministry of Agriculture and Rural Development (MINADER) and took place only in 2008.[10]

The research is based on weekly survey data collected by MINADER. Enumerators were positioned at all border points (both official and unofficial) in Cameroon in order to register all exports and imports of food and agricultural commodities for a period of two weeks every month (weeks were randomly selected, with the restriction that each week was selected six times) during the 2008 calendar year. Other information collected includes data on the mode of transportation, storage, characteristics of actors, and costs.

ICBT in Cameroon was found to be strongly related to the operation of local markets located close to the border. Those markets serve as storage and relay sites that allow for the distribution of commodities to neighboring countries. Nkendah (2010) identifies 10 border markets located along the Cameroon border. Contractual relations within border markets are based on trust (Fafchamps, 2007; Nkendah, 2010).

It was estimated that informal trade in agricultural and horticultural commodities between Cameroon and its neighboring countries in 2008 was worth FCFA 37.9 billion, very close to the value of official trade in these products (FCFA 39.6 billion), accounting for 48.7 percent of total trade. The primary

[10] The Ministry of Agriculture and Rural Development of Cameroon has also recorded trade flows with Nigeria.

destination of these exports was Equatorial Guinea, followed by Chad and Gabon.[11]

This survey also collected information about the traders involved in informal trade, including education, literacy, and distance between their homes and border crossings. The survey indicated that 23 percent of traders were female and 70 percent were male; children accounted for 7 percent of the traders. The survey also indicated that 93 percent of traders were literate but 51 percent had no education or only primary education. About 51 percent of the traders lived in cities located within 10 kilometers of the border.

Kenya

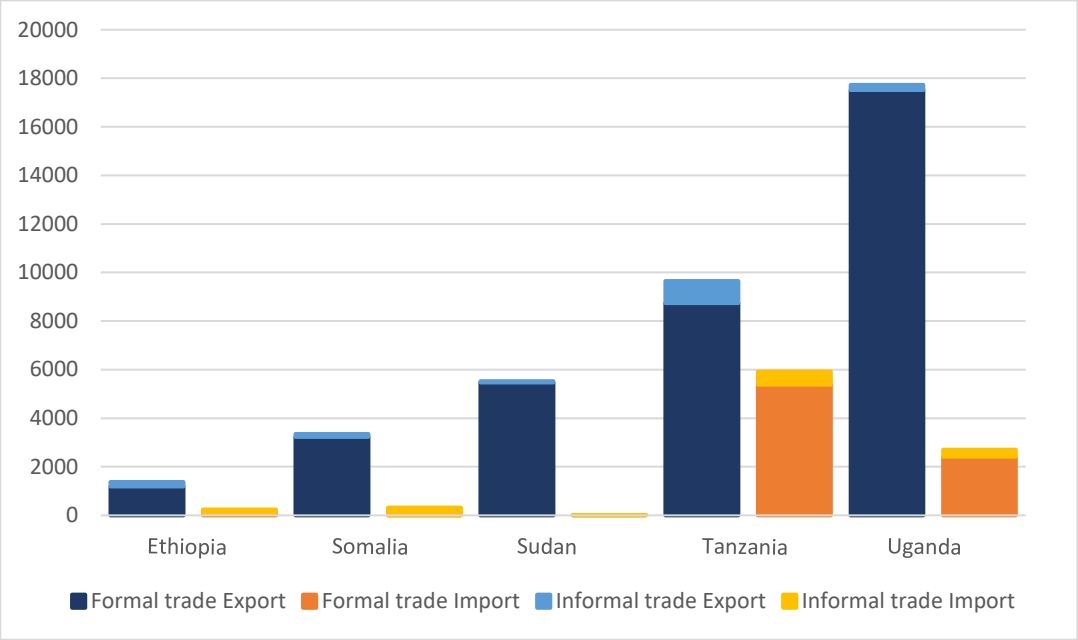
The Kenya National Bureau of Statistics (KNBS) implemented a survey of ICBT during the second and third weeks of June 2011. The KNBS survey covered 15 of the 24 official border stations in the country. Selection of the border posts was based on previous investigatory field work that highlighted the importance of ICBT at these particular stations (Kenya National Bureau of Statistics, 2011). A second survey for 2015-2016 was announced on the KNBS website but as of May 2018, results had not yet been released.[12]

In the 2011 survey, ICBT was estimated at 6.3 percent of total trade between Kenya and its five neighboring countries (see Figure 12). In absolute terms, Kenya's ICBT is most important with Tanzania, but in relative terms, ICBT is most important with Ethiopia, representing more than 25 percent of total trade with this country. It is worth noting that trade with Sudan is almost completely one-way, as Kenyan imports from this country are negligible. Formal imports from Somalia represent less than 0.2 percent of formal exports to Somalia, but informal imports from this country are 2.5 times greater than informal exports.

The majority of industrial products exported informally by Kenya include building materials, utensils, beer, and soft drinks. The main agricultural commodities exported informally by Kenya are miraa, potatoes, and tea. The main modes of transportation of ICBT in Kenya are push cart, bicycles, and human transport.

[11] Based on the survey data, Nkendah (2010) concluded that Cameroon's imports in 2008 from its neighboring countries was insignificant.
[12] Further information can be found at: https://www.knbs.or.ke/informal-cross-border-trade-survey-2nd-cycle-2015-16/

Figure 12. Formal and informal trade (exports and imports) of Kenya with neighbor countries, 2nd quarter 2011 – Ksh Millions



Source: Kenya National Bureau of Statistics, 2011

Benin

The Institut National de la Statistique et de l'Analyse Economique (INSAE) based in Benin collected data on informal cross-border trade at 171 border points between September 19 and September 28, 2011. The survey, the Enquete sur le Commerce Exterieur Non Enregistre (ECENE), recorded 17,749 individual transactions and covered only illegal border posts. ECENE is thus a direct measurement of smuggling,[13] that is, "formal (registered) firms fully evading trade-related regulations and duties by for instance avoiding official border crossing points" consistent with ICBT definition B. The raison d'etre of this specific survey is related to Benin's unique trade situation. The country specializes in 'Entrepot Trade'[14] and shares a common border with Nigeria, a country characterized by high import duties and other trade restrictions (Igue and Soule, 1992; Bensassi, Jarreau and Mitaritonna, 2016).

[13] See Bensassi, Jarreau and Mitaritonna, 2016.
[14] Entrepot Trade involves importing goods into country B from country A, and re-exporting, generally without modification to goods, to a third destination: country C.

Over the 10 days of the study, the total value of recorded trade was 15.18 million USD. A large part of the Benin's imports came from Nigeria (91 percent), followed by Togo (8 percent). The main products imported from Nigeria were petroleum products. The primary destination of Benin's informal exports was also Nigeria (92 percent), followed by Togo (7 percent). Informal exports were largely agricultural (meat (6 percent), cereals (18 percent), and cooking oil (12 percent)).

Bensassi, Jarreau and Mitaritonna (2016) use this database to estimate the determinants of informal cross-border trade and conclude that as expected, high tariffs and import bans are significant determinants. Time sensitivity is also a significant determinant of informality: when products are fresh and prone to deteriorate, traders avoid official border posts where delays are frequent and lengthy.

CILSS

CILSS (Comite Inter-etatique de Lutte contre la Secheresse au Sahel) is the primary organization collecting and reporting formal and informal trade data on staple foods and livestock in West Africa. It tracks 10 main trade corridors in West Africa, disaggregated by means of transport (truck, rail, and hoof/livestock).

CILSS defines a trade corridor as a geographical route that links at least two countries and contributes to food security, i.e. to transport agricultural products from surplus zones to deficit zones, with significant volume and value of the product that passes through that route. Along each corridor, CILSS enumerators collect information on trade flows and on trade barriers, with a particular focus on bribes and time delays at security checkpoints implemented by custom officers, police, and/or gendarmerie.

Data are collected by professional organizations on a daily basis using data collection sheets provided by CILSS. Data are cross-checked by the two data collectors at the end of the day to eliminate errors and then transferred into registers. Finally, data are consolidated and transmitted to each focal point by courier. The initiative is funded by USAID, which requires data quality assessments from CILSS.

CILSS does not use a sampling framework to extrapolate from a sample to the population. They intend to capture all trade—both formal and informal—occurring in the major markets and along the key borders in the region of the following agricultural goods: cattle, sheep, goats, maize, cowpea, millet,

sorghum, and rice. It is estimated that between 85 and 100 percent of trade occurring at these locations is captured by this method.

The CILSS initiative demonstrates the failure of official customs and national statistics institutes in recording trade data in the region. Comparisons of CILSS data with official custom data clearly show how the latter are abnormally low. It appears that this lack of precision in the official recording of trade flows is especially prominent in agricultural and food products, for which no import duty is levied on intra-regional flows. The proposed explanation is that custom officers do not control trade in products that does not generate any source of revenue. This failure of official customs and national statistics institutes is not limited to West Africa. The phenomenon has also been measured in in Eastern Africa:

> *. . . official annual exports of cattle from Ethiopia, the most populous country in the region, are less than 2,000, when in fact more than 25 times this amount is unofficially exported across-borders'…' For some commodities, like livestock and grain, unofficial exports to neighbouring countries can exceed officially licensed trade by a factor of 30 or more. (Little, 2005, p. 1)*

In addition, the CILSS initiative collects data on road harassment by custom officers, police, gendarmerie, city halls, and sanitary and phytosanitary institutes. For example, in June 2017, the average number of checkpoints were five controls per 100 km in Côte d'Ivoire. Along the livestock corridor between Mauritania and Senegal, recorded illegal payments per 100 km averaged $24 in the same month, while delays in the delivery of cola caused by road harassment averaged 231 minutes per 100 kilometers. CILSS organizes roadshow campaigns and market shows and contributes to private sector advocacy efforts to publicize road harassments in the region. In early 2018, the initiative reported that since its establishment, they observed a 71 percent decrease in bribe costs and a 27 percent reduction in delays at border checkpoints. While it is not proven that these reductions stem from the CILSS initiative, the reductions are significant and are observed along five key trade corridors.

Botswana

Ama, Mangadi, and Ama (2014) surveyed 520 women and men in informal cross-border trade across four major entry points into Botswana. There are more women traders (61 percent) than men (39 percent). A majority of the traders had a secondary school certificate/diploma and had been involved in ICBT for only 1-5 years. The four most commonly traded commodities were agricultural products and outputs (40 percent), industrial goods (27 percent), services (10 percent), and textiles (8 percent). Respondents reported that their main motivation for informal trade was to provide a source of income for their families.

FEWS-Net regional survey

The USAID-sponsored Food Security and Nutrition Working Group (FSNWG), through its Market Analysis Sub-group, conducts a survey of ICBT between Burundi, DR Congo, Djibouti, Ethiopia, Kenya, Rwanda, Somalia, South Sudan, Sudan, Tanzania, and Uganda. This initiative, started in 2005, covers 88 food commodities and livestock. The survey does not completely capture all ICBT in the region because collection is limited to selected borders; in addition, data are not collected 24 hours per day, 7 days per week or for all traded commodities. This survey provides a sample whose representativeness is not evaluated. FSNWG regularly publishes the results of the surveys on the FEWS Net website.

Gaps in ICBT survey measurement

Because of the fragmented and uncoordinated nature of the surveys on ICBT trade, we are unable to determine whether the data collected across Africa are representative of total ICBT. Many of the surveys were of limited time duration, even with a marketing year, and thus give little sense of the magnitude and direction of ICBT across time. Even the more sustained research efforts over time, such as the Uganda surveys or CILSS, are often restricted to a limited number of trade corridors and products. Monitoring may be limited to daytime coverage and thus may underestimate informal trade that occurs during the night. Focusing on the major trade corridors may provide helpful insights to our understanding of ICBT, but it is

difficult to extrapolate beyond the survey data to say much about ICBT at the national level, let alone the regional or continental level.

Moreover, it is likely that initiatives to measure informal cross-border trade were launched in places where local authorities were initially aware of the importance of the phenomenon. This leads us to question whether the research may suffer from selection bias that prevents us from concluding much about those trade corridors not selected.

We complete this section by mentioning an important conclusion from all these surveys. ICBT has a strong gender aspect. In Rwanda, it was found that the majority of small-scale cross-border traders are women (83 percent) and that the majority (82 percent) of these traders confirmed that small-scale cross-border trade was their main source of income and food for their families (Mwanabiningo, 2015). In Somalia, Little (2005) concludes that informal trade is mostly operated by of females, "especially women who often pursue petty trade as a survival strategy to feed their families" (p. 10). Ndelela (2006) states that while the entirety of the formal sector in Zimbabwe is dominated by males, the informal sector is dominated by females and that 90 percent of all ICBT in the 1990s was conducted by females. Lesser and Moisé-Leeman (2009) mentions that "studies of trade between Mozambique and South Africa found that over 70% of traders were women. Similarly a study of trade between Zimbabwe and South Africa found that over 65% of traders were women" (p. 16).

Econometrics of mirror trade data

While survey work clearly plays an important role in measuring trade data, such surveys tend to focus on capturing flows of smaller, informal traders. In order to measure informal trade created by formally registered traders, one can use a statistical and econometric analysis of formal trade data instead.

Each country reports its own values and quantities of formal imports and exports, which are recorded in global databases such as COMTRADE. In an ideal world, bilateral import and export values reported by trading partners should be equal, but this is frequently not the case. The difference in import and export values for matching flows creates a measurable gap which, in combination with the use of tax rates, can capture information regarding informal trade in the form of tax evasion even if, as stated earlier, there

are other measurement problems associated to this type of ICBT. Several studies, primarily focused on eastern and southern Africa, have explored the relationship between tax rates and evasion in the form of trade gaps.

Pioneering research on the underinvoicing of imports by Bhagwati (1964) suggests that the discrepancies between a country's reported imports and the corresponding exports reported by its trading partners may be explained by the undervaluation or misclassification of imports at the border in order to reduce the tariff burden. More recently, Fisman and Wei (2004) build on Bhagwati's insights to examine bilateral trade flows between mainland China and Hong Kong in an attempt to measure the value of unreported trade due to tax evasion.

Van Dunem and Arndt (2009) use a similar approach to explore several distinct forms of tax evasion at the product level. They empirically examine evasion in Mozambique by comparing export data reported by South Africa to import data reported by Mozambique for 2003. Generally, they find a positive relationship between higher tax rates and higher rates of evasion. Using the Fisman and Wei approach, Van Dunem and Arndt (2009) are also able to observe evasion occurring through misreporting of prices and under-reporting of value, as well as misclassification of products. They find that the average level of evasion in Mozambique is nearly 36% of total recorded imports. Evasion is prominent in more highly taxed product categories.

A similar approach is used by Levin and Widell (2014) to examine evasion in Kenya and Tanzania. They also introduce trade with the United Kingdom as a comparison to intra-regional trade and introduce a time element by analyzing data in both 2000 and 2004. They find evidence of evasion in both Kenya and Tanzania, but in different forms for each country. In Kenya, there is evidence of mislabeling, while in Tanzania, they find evidence of underreporting of values and quantities. Overall, there appears to be more evasion in Tanzania, as well as an increase in evasion over the time span. They also find evidence of evasion in trade with the UK in both Kenya and Tanzania; again, more evasion occurred in Tanzania: evasion as a share of the average export value is 30 percent and 25 percent between Kenya and Tanzania, 30 percent from UK to Tanzania and 1 percent from UK to Kenya.

Bouët and Roy (2008) also use the Fisman and Wei methodology to study import duty and export tax evasion in Kenya, Mauritius, and Nigeria. Their study provides a comprehensive examination of bilateral trade flows across all trading partners and products. They find a positive relationship between tax rates and evasion in all three countries, but particularly for Nigeria. The difference between the three cases is preserved when comparing the same set of products and trading partners. As in the case of Levin and Widell (2014), Bouët and Roy (2008) find evidence that evasion increased between 2001 and 2004. They find that the average evasion gap in value is 35 percent for Kenya, 38 percent for Mauritius, and 30 percent for Nigeria. It is higher for differentiated products relative to non-differentiated products.

Using multiples approaches, Jean and Mitaritonna (2010) develop a theoretical model of the effects of enforcement on evasion and empirically examine the trade gap using the Fisman and Wei (2004) approach for all countries and all products in 2004. The empirical portion of the study finds evidence of widespread global evasion, with the highest levels of evasion occurring in developing countries.

These studies using formal data to measure tax evasion focus on ICBT definition C, where formal trading companies use formal trading ports and border crossing yet evade paying taxes by underreporting value and quantity or by misrepresenting the product itself. While this field of study can be contentious due to the restrictive assumptions that often must be made to perform this analysis (for example, can the entire reporting gap attributed to efforts at tax evasion?), this literature seems to agree that there is widespread evasion and that evidence of this can be captured via empirical analysis of formally reported data. This information provides insights into the measurement of ICBT that are frequently overlooked in smaller survey methods of measurement.

4. The Determinants and Implications of ICBT

What are the factors that encourage informal trade? What are such trade's implications? In this section, we first present a review of the academic literature on informal trade in order to learn potential lessons from a general point of view. We then summarize the institutional literature and our discussions with stakeholders on the subject of determinants and implications of ICBT.

Review of academic literature on ICBT determinants and implications

There is a relatively large literature on the determinants and effects of ICBT. From this literature, we see that one of the main determinants of ICBT is the cost associated with formal trade. The implications are often positive for local consumers in the importing country, as well as for smugglers/informal traders, but are negative for local producers and public revenues in the importing country. The global impact may be positive or negative depending on specific features of the economy.

Bhagwati and Hansen (1973) examine the theoretical conditions under which smuggling improves a nation's welfare. They conclude that smuggling cannot be uniquely welfare-ranked vis-a-vis non-smuggling. The explanation is well presented with an analogy of the welfare effects of a trade-diverting customs union. Smuggling is analogous to implementing a custom union with a 'partner country' as an importer at higher cost than the 'outside country'. Therefore, smuggling implies a terms-of-trade loss, but the consumption gains may outweigh this loss.

Munir Sheikh (1977) designs a partial equilibrium model of smuggling. Smuggling increases total import demand and consumers' surplus, while generating gains for smugglers. Local legal producers are unaffected due to the small country hypothesis, which implies no change in local price. Tariff revenues are decreased by smuggling. It cannot be concluded whether the net effect of smuggling is globally a gain or a loss.

Falvey (1978) considers the case of quantitative restrictions. In this situation, illegal imports only compete with higher cost domestic production, not with lower cost legal imports. Hence informal trade necessarily improves domestic welfare.

Pitt (1981) considers ICBT definition C (partial evasion at legal entry points by under-declaration or misclassification) and concludes that legal trade is a camouflage activity for illegal trade. Legally imported and smuggled goods are considered joint products, and the cost of smuggling decreases as the volume of legal trade increases.

For Deardorff and Stolper (1990), smuggling in Africa is a well-organized and sophisticated activity. Its real costs are equal to, or inferior to, those associated with legal trade, such that it can be concluded that illegal trade improves welfare in these countries.

A few studies conduct an empirical investigation of ICBT in Africa, using either surveys or a calibrated partial equilibrium model.

Johnson and Dorosh (2015) design a spatial multimarket model for rice in Nigeria. This model explicitly takes into account the potential for smuggling but introduces it in a very simple way: smuggling includes a 30 percent additional transaction cost and does not imply any risk for the trader or for the consumer. They analyze the welfare implications of alternative rice tariff rates, given the government's objectives of increasing domestic production. They conclude that at tariff rates above 40 percent, some smuggling of rice is introduced through the north because smuggling has become more profitable than importing through official channels. At this tipping point, government tariff revenues are maximized. Consumers gain under lower tariffs scenarios.

Using the ECENE survey,[15] Bensassi, Jarreau and Mitaritonna (2016a) empirically analyze the determinants of informal trade in Benin. They find that legally and illegally traded products differ: agricultural products, goods facing higher tariffs or an import ban, and time-sensitive products are mainly smuggled, while other goods are legally traded. Bensassi, Jarreau, and Mitaritonna (2016b) confirm these results in the case of Benin, Togo, and Nigeria. Furthermore, they analyze the impact of distance from the border on smuggling in Nigeria. They find that illegal trade reaches all Nigerian states, regardless of the distance to the border; however, the prices of smuggled goods are higher in states more distant from the border than in states close to the border. Bensassi, Jarreau, and Mitaritonna (2016b) conclude that smuggling lowers the cost of an import ban for consumers.

[15] As described previously, the Institut National de la Statistique et de l'Analyse Économique (INSAE) in Benin created a survey (Enquête sur le Commerce Extérieur Non Enregistré) to directly measure smuggling between Benin and neighboring countries. The survey recorded 17,749 illegal transactions occurring at different unofficial border points in Benin from September 19, 2011 to September 28, 2011 (INSAE, 2012).

Two key determinants of ICBT

From a review of the literature and from the many discussions we held with stakeholders, we find two main determinants of ICBT.

First are the high monetary and time costs of formal trade (relative to the cost of informal trade). This determinant is indeed the main reason for ICBT according to the academic literature. High cost of formal trade involves:

i. High import duties, either on imports or on exports (Lesser and Moisé-Leeman, 2009; Afrika and Ajumbo, 2012; Bouet, Cosnard, and Laborde, 2017), coupled with high processing and clearance fees.

ii. Restrictions including exchange controls, state monopolies, and export prohibitions (Nkendah, 2010).

iii. Excessive time and inadequate border infrastructure, causing long delays at formal crossings (Afrika and Ajumbo, 2012; Bouet, Cosnard and Laborde, 2017). Bensassi, Jarreau, and Mitaritonna (2016) underline that with processing fees, tariffs, and taxes all included, the cost of crossing a border is often higher than the value of goods being traded informally. They also show that these excessive delays are especially costly for perishable agricultural produce items that can spoil while behind held for border clearance.

iv. Institutional and regulatory barriers to trade are also increasing the cost of formal trade. Muluvi et al. (2012) highlight these barriers, which are very high in some part of Africa, as a major factor in the level of ICBT. They give the example of a Kenyan exporter who must obtain an import declaration form that involves numerous agencies in order to conduct the procedures for the inspection, verification of dutiable value, and certification of compliance. At the regional level (EAC), there are numerous certification and conformity requirements implemented in order to guarantee technical quality standards in regional trade. Licenses are also needed to transport goods across municipalities. There are also immigration procedures and rules of origin, and there are language barriers since all EAC countries are not English-speaking

(Burundi, a francophone country, requires documents to be completed in French). Regulations similar to those in Kenya give traders an incentive to skip the extensive time costs and effort involved in formal trade and to trade informally. Ndelela (2006) shows that in Zimbabwe, formal trade is subjected to a host of regulations regarding the establishment and operation of a business, zoning regulations that restrict locations within the cities, regulations related to health and environment, registration from the local governments, and labor regulations that require compliance with paying legal minimum wages. As explained by Ndelela (2006), "compliance with the above is not only costly, but is also time consuming and involves complicated bureaucratic procedures – which are often beyond the means of those in the Informal Sector . . . Firstly, many traders are unaware of the existence of the regulations. Secondly, many cannot afford the cost of compliance. Even more importantly, many do not see the benefits of compliance. Some traders enter this sector precisely to escape strict regulations" (p. 28)

i. The high cost of formal trade also involves corruption and insecurity. As already mentioned, in West Africa, the CILSS initiative provides a relatively precise measurement of corruption; for a transporter of agricultural or food commodities on a trade corridor in West Africa, bribes are demanded by gendarmerie, police, customs, city halls, and veterinary and phytosanitary inspectors.

ii. It is important to mention that when choosing informal trade, traders compare the cost of formal trade to that of informal trade. The latter may be low, particularly due to weak law enforcement.

iii. Some reports also mention the existence of market imperfections, particularly the presence of only a few distributors who control prices and distribution in neighboring markets. For example, this was indicated by the Rwanda's Ministry of Trade and Industry concerning Rwanda's exports to RD Congo; a limited number of distributors have monopsony power and set prices at uncompetitive levels. These price levels encourage informal trade in small quantities, as informal traders are prone to avoid the monopsony power of these few distributors.

The second main determinant of ICBT in Africa is the existence of an extensive informal sector. An Lesser and Moisé-Leeman (2009) study examines the importance of the informal sector in an economy and concludes that businesses that are not formally registered tend to export and import informally. The existence of a permanent informal sector is related to (i) limited access to finance; (ii) limited market information; and (iii) limited knowledge, education, and business management skills.

It is possible to provide an (imperfect) assessment of these trade barriers in Africa. Bouët, Cosnard, and Laborde (2017) add measures of tariffs, non-tariff measures, and other trade costs to create a single indicator of trade cost, to compare the relative importance of these different trade barriers, and to provide an evaluation of total trading cost in Africa. Tariffs are evaluated based on the work conducted at Centre d'Études Prospectives et d'Informations Internationales (CEPII) using the MAcMAP-HS6 database (Bouët et al. 2008).[16] Ad valorem equivalents of non-tariff barriers (NTBs) are provided by Kee, Nicita, and Olarreaga (2009). Data from the World Bank Group's Cost of Doing Business report[17] on costs and time of border and documentary compliance are converted into ad-valorem equivalents, based on methodology developed by Hummels and Schaur (2012). These authors evaluate the cost associated with the time a product spends in transit by computing the 'time premium' in the choice of transportation between air and ocean transit from data on US imports. They find that each day in transit is equivalent to an ad-valorem tariff between 0.6 and 2.1 percent and that this figure can go up to as much as 3.1 percent for agricultural products.

[16] Bouët, Cosnard, and Laborde (2017) use the most recent version of the MAcMAP-HS6 database (the 2010 version; see Guimbard et al., 2012) and ad-valorem equivalents of import duties (ad valorem and specific).
[17] See http://www.doingbusiness.org/.

Figure 13. Combination of all available export costs in ad-valorem equivalents

Figure 13.a. All Products

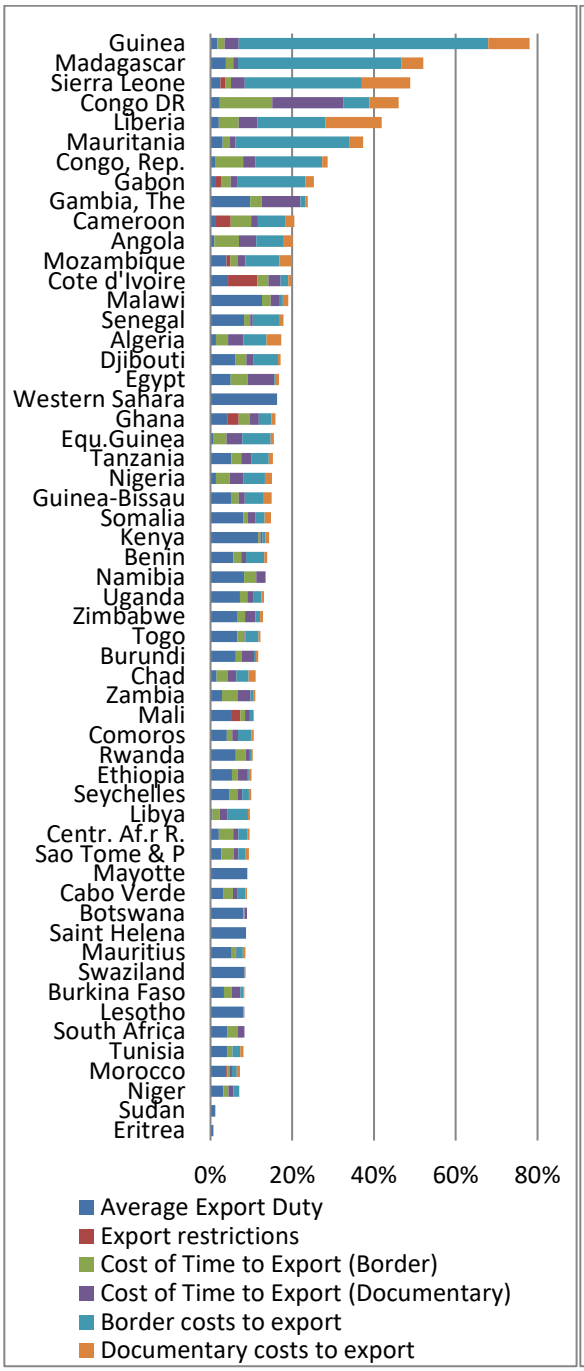
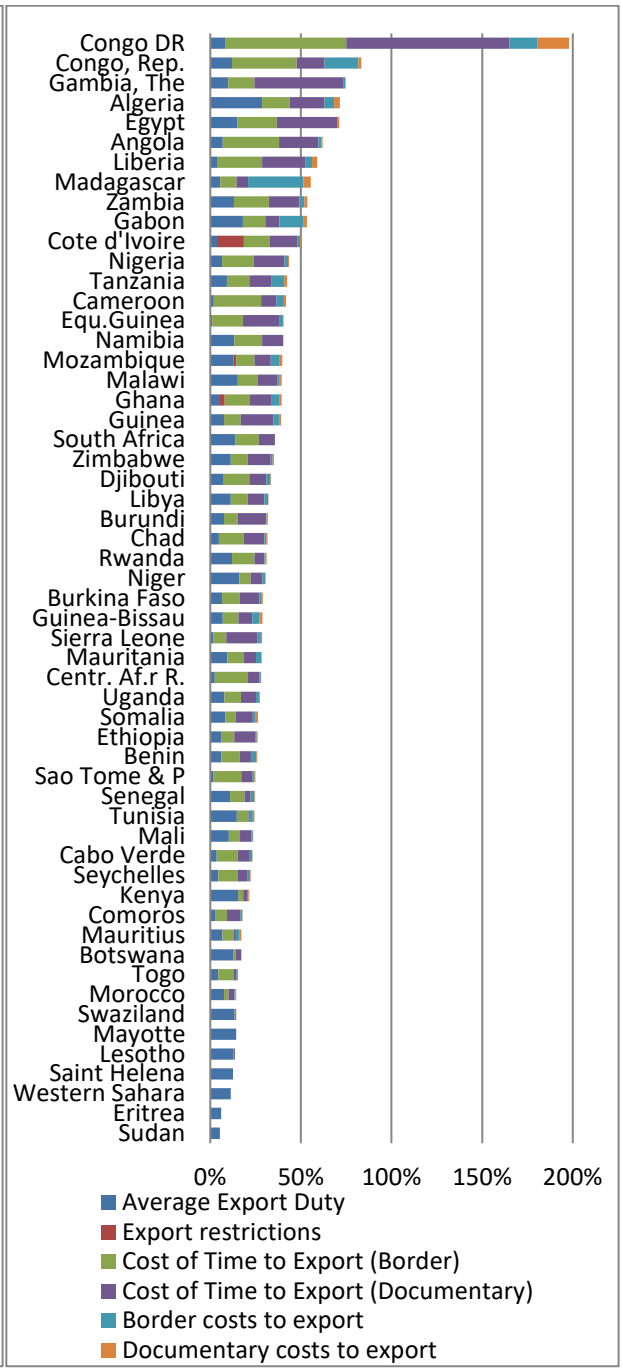


Figure 13.b. Only Agricultural Products

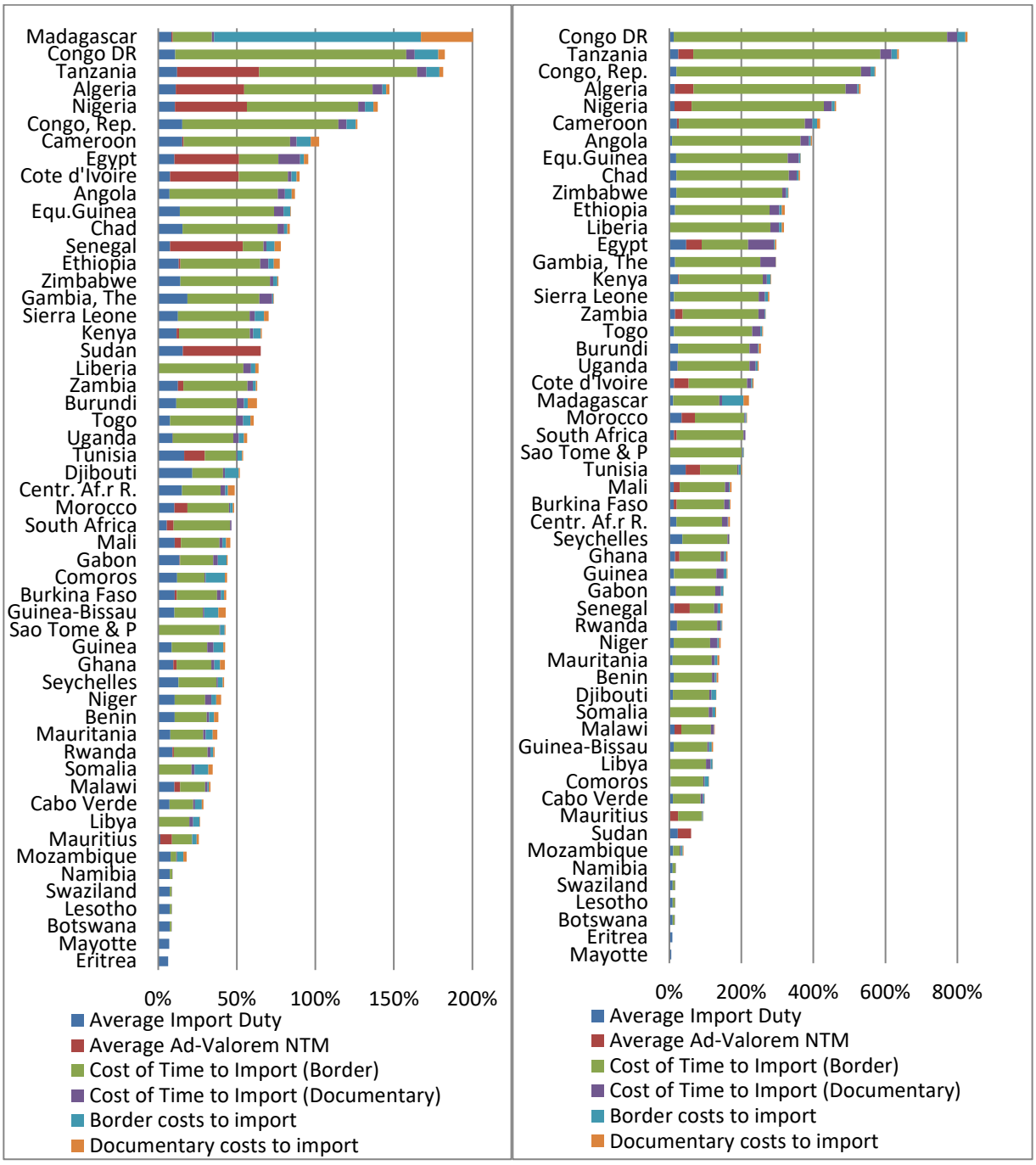


Source: Bouët, Cosnard, and Laborde, 2017

Figure 14. Combination of all available import costs in ad-valorem equivalents

Figure 14.a. All Products

Figure 14.b. Only agricultural products



Source: Bouët, Cosnard, and Laborde, 2017

As can be seen in the previous figures, countries with the highest import costs are Madagascar, DR Congo, Tanzania, Algeria, Nigeria, and Congo. African countries as a whole have high import costs, averaging 60 percent. Outside of Africa, only 8 percent of countries have import costs greater than this average. Dispersion within Africa is high as well: overall costs range from 6 percent to 200 percent. These figures also show that costs associated with time for documentation and border compliance are even more important for imports than for exports. The results have to be considered carefully, as the estimates are based on a methodology that provides at best an approximation of the time premium that has then been extrapolated to all commodities. However, the results indicate high level of trade costs at the border in Africa. We also conclude that formal intra-Africa trade faces particular impediments because it cumulates these high levels of barriers on both the export and the import sides.

Nkendah (2010) analyzes informal trade between Cameroon and its CEMAC partners and concludes that other important determinants of ICBT include droughts and other climatic events, as well as civil wars. It is true that these factors can reduce production in specific places, thus encouraging trade in first-necessity products; as a result, the high costs of formal trade lead to increased informal trade.

The implications of ICBT

Numerous studies have examined the welfare impacts of ICBT. However, a distinction may be made between short-term and long-term implications.

ICBT may have positive consequences on the food security and income of poor households in the short term. In Rwanda, studies have found that 65 percent of small-scale cross-border traders used this trade as their main source of income and their first source of food for families (Mwanabiningo, 2015). Meagher (2003), Little (2005), and Lesser and Moisé-Leeman (2009) conclude that ICBT is an important source of income for poor households and contributes to greater food security in importing countries and enhanced income earnings and employment opportunities in exporting countries. Improvement of food security is particularly important in food-importing countries suffering from drought, e.g., Somalia and Malawi.

However, ICBT may have negative consequences in the long term, such as unfair competition vis-à-vis formal trade, decrease of investment in the formal economy, negative consequences on food safety and

health, and decrease of public revenues and the supply of public services and infrastructure. The last element is key when we consider that while trade taxes represented just 0.8 percent of total tax revenue in OECD countries in 2003, this share was 25.3 percent in African countries (Lesser and Moisé-Leeman, 2009).[18] Concerning consequences for food safety and health, in a meeting we attended in Arusha (Tanzania), EAC officials acknowledged that there is significant informal trade occurring between Tanzania and Kenya, enough to increase overall trade by at least 10 percent; however, they consider this trade a negative overall because it can introduce pests, diseases, and low-quality products. Obtaining SPS certification requires a lot of bureaucracy, but it is inexpensive. The trade regime is simplified for small farmers, but these farmers are not exempt from all certification.

Lesser and Moisé-Leeman (2009) concedes that informal trade, when practiced on a large scale, can lower the efficiency of health, safety, and environmental protection. This is true in particular for agricultural commodities: trade in small quantities (ICBT definition A) escapes the sanitary and phytosanitary controls conducted at the border. This may have implications for local food safety and contribute to the proliferation of human, animal, and plant diseases across-borders.

5. Policy Recommendations

Based on the literature on ICBT in Africa as well as from discussions with stakeholders, we identify the main policy recommendation as the motivation of informal actors to join the formal sector, i.e. the encouragement of informal traders to trade formally (Little, 2005; Lesser and Moisé-Leeman, 2009; Nkendah, 2010; Afrika and Ajumbo, 2012; Republic of Rwanda Ministry of industry and Trade, 2012; Mwanabiningo, 2015). Little (2005) posits that governments can either facilitate informal trade or police it, but that they clearly should work to encourage movement from informal to formal trade. However, from discussions with stakeholders, we conclude that such efforts may be complicated by the fact that much of informal trade is carried out by poor and illiterate traders who remain resistant to using more formal

[18] This share varies a lot across African countries: in 1999, it was 49.4 percent in Swaziland, 45 percent in Lesotho, 33.5 percent in Mauritius, and only 1.8 percent in South Africa (Lesser and Moisé-Leeman, 2009).

channels.

One way to encourage movement from informal to formal trade is to create policies that decrease the cost of formal trade without increasing the cost of informal trade. As mentioned by Lesser and Moisé-Leeman (2009), individuals with low levels of education or who are illiterate, as well as those with ethnic communities or family across-borders, are unlikely to give up informal trade (ICBT definition A). ICBT is an important practice for these populations, providing multiple potential benefits including food security. Therefore, policy efforts should focus more on reducing ICBT definitions B and C.

Policy adjustments focused on the reduction of formal trade costs can include:

i. Policy adjustments focused on the reduction o Elimination of custom brokers, known for corruption. Corrupt practices at the borders and checkpoints requiring illegal payments can be reduced; this trading cost is likely to affect more formal traders than informal traders, in particular ICBT definition A;

ii. Suppression of pre-shipment inspections. Initially implemented to fight over-invoicing and evasion of capital controls, pre-shipment inspection has been recently shown to be costly and inefficient and even to increase corruption (OECD 2009).

iii. Adoption of the same single documentation for transaction within a Free Trade Area or a Customs Union. It is often mentioned that the implementation of regional trade agreements should be accelerated (Afrika and Ajumbo, 2012). In this area, another proposal is to align trade documents with international standards and/or a single shop for all trade-related documents (Lesser and Moisé-Leeman, 2009).

iv. A simplified trade regime for low value consignments, as these types of transactions represent an important share of ICBT in Africa south of the Sahara (OECD 2009). Discussion with officials in Kampala (Uganda) and Arusha (Tanzania) mentioned that this would not impact many small informal traders due to these traders' high rate of illiteracy. EAC officials encourage the formation of informal traders associations to help illiterate traders fill out simplified trade documents.

v. Lower trade-related fees and charges for export and import procedures. There are still many fees paid by formal traders with respect to all procedures at the border. These fees are often relatively high with respect to the service received. Governments could bring more transparency in the determination of these fees and possibly reduce fees or even remove some of them (consular fees).

vi. Simplification of the release and clearance of goods from customs. The time required to export and the time to import are still very high for many African countries, as shown by Doing Business 2018 (World Bank Group, 2018). For example, in DR Congo, the time to export (border compliance and documentary compliance) is estimated at 1,213 hours (50.5 days) in 2018. During meetings in Tanzania, officials noted that it is not unusual for entry time to surpass 45 days at ports of entry in Tanzania. Of course, these are extreme examples; exit time is four hours in Swaziland and seven hours in Lesotho. According to Hummels and Schaur (2012), the cost associated with one day in transit is equivalent to an ad-valorem tariff between 0.6 and 2.1 percent (3.1 percent for agricultural products). Similarly, Wilson (2007) shows that if the time spent at the border recent is reduced by 4.76 percent, intra-regional export exports would increase by 10 percent in volume in Africa south of the Sahara. This is a key issue for some raw agricultural commodities.

vii. Simplification of SPS and TBT certification. It is often recognized that while SPS and TBT requirements are important, they should be designed and implemented in a simple way so as not to act as significant barriers to formal trade (Lesser and Moisé-Leeman, 2009).

viii. An improvement of border infrastructure. Infrastructure, including border storage facilities and transportation infrastructure, is also frequently mentioned (Little, 2005; Lesser and Moisé-Leeman, 2009). In some parts of Africa, reinforcing security should be a priority (Little, 2005; 2007).

Further policy recommendations relate to how to reduce the size of the informal sector more in general. As earlier explained, the importance of ICBT is related to the existence of large informal sectors:

businesses that are not formally registered tend to export and import informally. Therefore, policy recommendations can also be formulated to encourage the entire informal sector of African economies to move to the formal sector. These recommendations may include:

i. Improving access to financing. Access to finance is crucial for investment and production. It is even more crucial when exporters and traders need to finance a deposit for the release and clearance of goods at borders. Small traders do not have tangible assets as collateral to access formal finance. Informal finance works but is more costly. This is why credit programs have been implemented in many African countries. In Rwanda, for example, a program facilitating access to credit for informal operators, particularly women, has been launched (Republic of Rwanda Ministry of industry and Trade, 2012).

ii. Improving market information. Little (2007) shows that poor access to market information poses a significant obstacle for the development of a formal trading sector in the Horn of Africa; without access to new information and communication technology, traders are obliged to rely on costly market brokers (dilaal). An improvement of price information at different locations encourages investment in formal trade, particularly in large-scale trade, since it improves knowledge of the profitability of trade operations. There are many initiatives aimed at improving the transmission of information throughout Africa. CILSS is currently working on computerizing its data collection system in order to make information on prices and transactions available in real time to all operators in the West Africa region. The system will be implemented through an integrated web-based system and smartphone technical protocols. Mwanabiningo (2015) recommends the widespread utilization of cell phones by traders in order to communicate on issues related to small-scale cross-border trade, particularly prices and availability of goods and customers. Similarly, the Zambia Cross-Border Trade Association has implemented a system for improving traders' access to information on commodity prices and trade volumes in major markets via the Internet or SMS (Lesser and Moisé-Leeman, 2009).

iii. Improving knowledge, education and business management skills. Training should be provided

to informal traders regarding regulations, administrative procedures, and access to credit, but should also focus on informing informal traders regarding the advantages of formalizing their activity. Training should also educate custom administrations about efficient procedures and codes of good conduct; this is included in the *Revised Arusha Declaration for Good Governance and Integrity in Customs* of 1993 (Lesser and Moisé-Leeman, 2009).

Reducing of policy uncertainty is also important, according to stakeholders interviewed for this paper. From these discussions, we conclude that formal traders are complaining of large policy uncertainty; for example, the sudden implementation of an export prohibition may ruin the efforts of the private sector in settling a trade network. This is especially true in the Eastern and Southern regions of Africa.

In addition to decreasing formal trade costs to encourage informal traders to 'formalize' their activity, a few other recommendations are often put on the table in official reports or during discussions with stakeholders. They include:

i. The establishment of systematic ICBT data collection and analytical capacities at key border points in order to evaluate the importance of ICBT and gauge its contribution to the economy. There is a real need for more accurate and systematic data on ICBT. This data should include more countries and different modes of transport; it should assess more precisely the magnitude of this phenomenon and the share of the various types of informal trade, the motivations behind such trade, and its implications for the domestic economy. Collecting these data is important to initiate policy dialogue (Little, 2007) and is also important for the design of precise food balance sheets (this point was frequently raised during meetings with stakeholders). There are already remarkable data collection systems in place that can be copied in other places (UBOS) or extended to more products and trade corridors (CILSS).

ii. Prioritizing a gender-based approach to ICBT. It is important to collect gender-disaggregated data in order to understand the social implications of ICBT and of implementing policy recommendations. Many initiatives on training and access to credit are giving priorities to women (Republic of Rwanda Ministry of industry and Trade, 2012).

iii. Facilitating the establishment of ICBT associations and business linkages between ICBTs and established companies. During meetings with the Ministry of Trade in Uganda, our interlocutors insisted on a large political agenda in favor of formalizing informal trade. This includes making a simplified trade regime document available at the border and establishing a trade information desk managed by traders and accessible to every small-scale trader to try to overcome problems with illiteracy. One important benefit to registration for traders to is in terms of lowering risk; if traders are correctly registered, they cannot be jailed for illegal entry in foreign country. For the Ministry of Trade, this system has had an impact on informal/formal trade by reducing the share of informal trade in 2012 significantly.

6. Conclusion

Informal cross-border trade represents a prominent phenomenon in Africa. Across specific borders, it represents a significant proportion of formal trade, sometimes even greater than official flows. A number of different behaviors underlie ICBT: trading small quantities through official border posts, underinvoicing traded values at official border posts, and smuggling. Informal trade has, at least in the short term, positive consequences on poverty and food security. It is a natural economic activity for many poor households.

However, this type of international trade may weaken the potential for economic growth and development in the long run through its impact on investment in the formal sector, on public revenues, and on food safety. Many African governments are aware of the importance of the phenomenon and of this dual conclusion. The best policy recommendation remains to motivate informal traders to enter the formal sectors by reducing formal trade costs and increasing support mechanisms to engage in formal trade.

In the meantime, efforts to measure the magnitude of informal trade should be encouraged. To date, efforts have largely been fragmented but there are encouraging signs that countries (e.g., Uganda) and regional efforts (e.g., CILSS; FEWSNET) are trying to be more systematic and comprehensive in their monitoring of trade. Better data on informal trade will help quantify the potential costs in terms of foregone

tariff revenue, improved food safety and animal and plant health, and help provide better estimates of food consumption (through better estimation of national food balance sheets). Lastly, by better measurement of informal trade, we might better understand the impediments to formal trade to formulate policies to better facilitate trade through official channels.

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