

GHANA: CROSS-BORDER TRADE ISSUES

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Abstract

This study is part of the EAGER Trade Regimes and Growth research that explores barriers to cross-border trade. Five commodities (iron rods, tomatoes, maize, salt, aluminum cookware) and three border crossing points (Bawku area, Aflao, Elubo) were examined in the research. Using a regression model the researchers were able to estimate total (recorded plus unrecorded) commodity flows. The estimation procedures relied on “experts” (people with specialized knowledge of cross-border trade flows) to provide data using a relatively low-cost methodology to obtain information on cross-border trade flows. Using the southeastern Aflao border crossing as an example, the estimated data provided by experts illustrated that 28% of overland trade in the five products examined was unrecorded. Additionally, a structured questionnaire was administered to a sample of formal and informal traders to obtain information on traders’ modes of operation. The findings indicate: (1) liberalized trade procedures for exports have had a positive impact on cross-border trade reporting; (2) financial liberalization has resulted in traders having relatively easy access to foreign currency from FOREX bureaus; (3) respondents list government inspections and police/customs roadblocks as the two most important obstacles to cross-border trade; (4) monetary cost calculations associated with these inspections/roadblocks was estimated at 8 or more days in lost wages per month for over half of the respondents, (5) female traders rely on kinship and associations to complete trade transactions more than male traders; and (6) improvements in infrastructure have benefitted cross-border and overseas trade.

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TABLE OF CONTENTS

	Page
INTRODUCTION.....	4
1. LITERATURE REVIEW.....	5
2. METHODOLOGY.....	7
3. FINDINGS.....	12
4. POLICY IMPLICATIONS & RECOMMENDATIONS.....	21
5. BIBLIOGRAPHY.....	26
OTHER EAGER PUBLICATIONS.....	

INTRODUCTION

Export growth is a necessary component in economic development. Structural development programs promulgated by the International Monetary Fund, the World Bank, the U.S. Agency for International Development and other international institutions/organizations often are based on export-led development strategies. Regional trade among developing countries promotes market and product diversification, expands market size, provides markets for domestic manufacturing, and often plays a crucial role in resolving food security issues. Thus cross-border trade flows, and government policies that encourage or hinder them, are important components of economic development and growth.

The current study is part of the EAGER Trade Regimes and Growth research that explores the barriers to cross-border trade. The Ghana cross-border trade study has two objectives:

1. To calculate a total flow of cross-border goods by combining recorded data with "expert" opinion on unrecorded trade flows flow of goods across the border; and;
2. To obtain information on the relationships traders have established to facilitate cross-border trade or to circumvent obstacles, by interviewing a select group of traders.

There is little information available on the relationships traders have established to expedite the movement of goods across national borders (Clark 1994; McCorkle, Stathacos, and Maxwell 1995). These relationships link individuals, households, communities, and the public and private sectors. Governments can use information from these relationships to structure policies that expedite rather than impede cross-border trade.

The low value and volume of recorded (formal) intra-Africa trade is frequently explained by listing critical constraints such as: inadequate transportation systems, weak infrastructure, poor communication and information systems, and insufficient credit ("Obstacles to Regional Trade Border Crossings" 1995). And yet, as MacGaffey has stated, there is a sizeable flow of commodities (both formally and informally) across national borders:

The massive extent of this unrecorded trans-border trade in all regions of the African continent is evidence of a market integration that people have brought about for themselves, outside official systems which have failed to carry out the necessary tariff reductions and other measures to promote such regional integration. (MacGaffey 1991 p. 21)

The scale of unrecorded (informal) trade is a measure of economic activity that is unreflected in official national data collection efforts.

1. LITERATURE REVIEW

Numerous international organizations/institutions (United Nations, Africa Development Bank, World Bank) have encouraged economic cooperation within regional markets to foster greater country-specific and regional economic development and growth (Chatterjee 1989). Increased regional integration efforts in West Africa stalled during the past two decades as political and economic problems in the region forced individual countries to adopt inward-looking policies and/or abandon regional integration efforts.

An index of export similarity can be used to compare trade structures between countries to ascertain whether there exists a basis for trade based on the composition of exports. West African countries showed index values indicating relative dissimilar patterns of trade which indicates a basis for trade exists between countries in the region (Badiane 1991). The integral role the agriculture sector occupies in the economies of West Africa nations makes products from this sector the most likely to be involved in regional exchange.

Cross-border trade methodologies used to monitor borders in Kenya, Uganda, and Tanzania have been examined and incorporated into the current study where appropriate (Ackello-Ogutu 1996). A 1996 study examined the unrecorded cross-border trade between Kenya and Uganda (Ackello-Ogutu and Echessah 1996). Data was collected through monitoring various border exit/entry points to obtain information on the volume and value of trade flows through those points. Additionally a baseline survey of traders was conducted to obtain information on trader characteristics, sources of information, and market functions. This research confirmed that Kenya has a comparative advantage in manufacturing and processing. Kenya exports to Uganda are processed agricultural products (e.g. wheat flour) and manufactured goods such as hardware, textiles, and beverages. Uganda exports to Kenya are largely unprocessed agricultural commodities such as maize, beans and fish.

Economic gains from informal trade between Kenya and Uganda included job creation, provision of agricultural and industrial goods that would otherwise be unavailable, and amelioration of food shortage conditions (Ackello-Ogutu and Echessah 1996). Traders cited the lack of working capital as the single largest barrier to expanding their business. Other constraints were high interest rates, institutional restrictions such as licenses, poor infrastructure, and increased corruption at the border. The authors conclude that trade liberalization through regional cooperation initiatives should enhance the large trade potential that exists between Kenya and Uganda. These initiatives would include a harmonization of domestic food policies, a relaxation of trade constraints, and a willingness of governments to commit to these initiatives.

The devaluation of the CFA in 1994 presented a window of opportunity for Ghana to increase its intra-regional trade (Salinger and Stryker 1994). The impact of the CFA devaluation, however, varied from commodity to commodity, and from market to market. For example, the substitution of regional imports for European imports occurred more in the Ivory Coast and Ghana and less in

markets in the western part of the West Africa region (REDSO/WCA 1996). Niger in particular increased its exports of onions and other horticultural products to Ghana and the Ivory Coast. Countries such as The Gambia and Senegal, which are more distant from production zones in Niger, reported less substitution.

The current study builds on existing work on regional trade in West Africa which examined commodity flows (Stryker and Salinger 1992). Trans-border trade in Ghanaian horticultural products has focused on the coastal markets of Accra and Abidjan (Vordzorgbe 1997; Harre 1996; Holtzman 1996). Vordzorgbe's research focused on onions and discussed the intricate marketing system and the key players of that system (Vordzorgbe 1997). He concludes that the two principal barriers limiting intra-regional trade of Ghanaian horticulture products are related to infrastructure (e.g., poor roads, lack of adequate truck transportation) and institutional (e.g., lack of pricing information, non-harmonization of trade laws and regulations) constraints. The Harre study noted the lack of purple onions from Ghana in Abidjan markets, but the presence of purple onions from Niger despite the increased transportation required (Harre 1996).

Relative to research on horticultural products, research on intra-regional trade in cereals and livestock is well documented (Holtzman 1996). Recent research analyzed cross-border trade conditions in Ghana, Senegal, and the Ivory Coast for livestock, kola nuts, and onions (Wenner and Mooney 1995; Holtzman 1996; McCorkle, Stathacos and Maxwell 1995). Wenner and Mooney list four main problem areas that have a negative impact on the Ghana-Burkina Faso livestock marketing system (Wenner and Mooney 1995). These four problem areas are: prohibitive import duties, bribery and corruption, non-commercialization of livestock producers, and exchange rate issues. The first and second problems encourage cross-border smuggling. In the Holtzman study the role of indigenous regional trading networks was specifically addressed; a prime example of vertical relationships among traders. The McCorkle, Stathacos and Maxwell report concluded that ethnicity plays a less dominant role in cross-border trade. In contrast, a shared religion continues to be important, and Islam in particular continues to serve an important role in facilitating cross-border trade; a good example of a horizontal relationship among traders.

In addition to the exit/entry points along the Ghanaian border, the Kumasi market in central Ghana is a major consumption and redistribution center for imported and exported commodities (King 1996). The role of women traders in the Kumasi market illustrates the continued dominant role women occupy in trade. Historically women have held important economic roles as traders in West Africa (Clark 1994). Women have moved from petty trade into large-scale commerce importing and exporting to and from regional markets.

Aggressive competition exists among members of the Economic Community of West African States (ECOWAS) for external markets for their raw materials and agricultural products, yet intra-regional trade remains low. In Ghana in 1995-1996 formal (recorded) overland trade represented only 2 percent of total export value and 8 percent of total export volume (Ghana Ministry of Trade and Industry 1996). Due to the numerous licenses and fees and other

restrictions on goods shipped across national borders, unrecorded trade or smuggling frequently occurs. Historically in Europe, the removal of the medieval roadblocks between principalities marked the beginning of an economic Renaissance. A similar flowering of trade could follow their elimination in Ghana specifically, and Africa generally.

ECOWAS countries that are generally considered stronger economies (e.g., Ivory Coast, Senegal, Ghana, Nigeria) trade more within the region than weaker economies. Trade most often occurs between countries who share common borders, and involves a high degree of re-exporting when nonagricultural goods are traded (Okolo 1988-1989).

Two types of economic costs are associated with trans-border trade (West Africa Regional Trade Analysis "Obstacles to Regional Trade" 1995). According to the West Africa Trade Analysis report, costs associated with the public sector can be interpreted as direct or implicit taxation of the producer and/or the trader. Government can influence these costs by rationalizing and/or eliminating illicit payments associated with regional trade (e.g., payments to Customs officials, police, and others). This type of taxation on traders also involves loss of time and spoilage of merchandise. In the current research effort traders were asked to calculate the loss of time and value of spoiled goods associated with this type of economic cost.

The second category of economic costs is associated with the relative low level of economic development in African regional markets. A low level of effective demand in African regional markets is coupled with inefficiency in the use of factors of production and weak infrastructure in areas such as telecommunications and transport systems.

The current study is a logical extension of work on non-traditional export flows from Ghana to overseas markets which was completed in 1996 (Morris et.al. 1996). Though the authors acknowledge the existence of valuable trans-border trade between Ghana and its neighbors in gold, diamonds, arms, and drugs, it was not possible to include these activities due to their clandestine nature.

2. METHODOLOGY

Trade Data

To obtain an estimate of total overland trade it was necessary to utilize formal trade data collected at exit/entry points and estimate various pieces of missing data. For 1996 there was a relatively clean data set available for formal overland trade by commodity, point of export, value and volume of export. Formal overland trade data captured the flow of goods whose value and volume had been declared to Customs officers on an official export form at government-maintained exit/entry points along the Ghanaian border.

In estimating total trade volume at a given exit/entry point there were several pieces of data that

were characterized as missing:

- a. the formal recorded volume of trade for individual trips by different modes of transport (truck, headloader etc.);
- b. the amount of recorded volume of a product plus the unrecorded volume of a product transported in each individual trip through a formal exit/entry border crossing; and
- c. the volume of a product that crosses unrecorded through informal exit/entry border crossing points.

The methodology used to estimate the above missing data was a data augmentation methodology where missing data was imputed using a missing data model developed from elicited expert opinions. Discussions of missing data issues associated with statistical analysis has been previously presented by several authors (Rubin 1987; Gelman et.al. 1995 and Rubin 1987).

"Expert" Trade Data

The data augmentation methodology used in this study utilized people who had been identified as "experts" in overland trade in the three geographic border crossing areas where data collection was occurring. Experts identified included MOTI and Customs field personnel, local business people who had knowledge of trade flows (e.g., market traders), transporters, clearing agents, and MOFA field agents. This method of data compilation is known as prior elicitation.

The "experts" were asked to identify potential questionnaire respondents based on product traded. These respondents were then requested to estimate informal trade by using a series of scenarios based on existing trade patterns. Each "expert" was asked to provide different estimates based on weight (e.g., 50 kilos, 200 kilos etc.) for a list of products during peak and non-peak trading periods for three types of participants: headloaders, truck drivers, and expeditors (individuals who facilitate trade by preparing the export forms, arranging for cross-border transportation etc.). For each type of participant at least 5 values were provided that represented the "expert's" best guess of total trade being exported overland for that commodity during a specific month and year. "Experts" were interviewed at each of the selected exit/entry points. The type of "expert" interviewed and the product for which they were asked to make their estimates are listed in Table 1 for each of the three border crossings.

TABLE 1: List of Commodities and "Experts" Interviewed at Aflao, Elubo, and Bawku*

Border Crossing	Commodity	Type of Expert Interviewed**
AFLAO	Aluminum Products	Clearing Agent
	Tomatoes	MOTI
	Salt	Clearing Agent
	Iron Rods	CEPS
	Maize	MOFA
Elubo	Maize	MOFA
	Salt	Clearing Agent CEPS MOTI
	Iron Rods	Clearing Agent CEPS
	Aluminum Products	CEPS
Bawku*	Tomatoes	MOFA
	Salt	CEPS MOFA
	Maize	MOFA
	Aluminum Products	CEPS
	Iron Rods	CEPS

Field Survey Data, 1997-1998.

*Bawku includes the northern exit/entry points of Paga, Kulungungu, and Pulimakom.

**There were 26 "experts" interviewed in total.

Methodology for Estimating the Distribution of Recorded Trade Volume of Ghanaian Export Products Crossing at Official Customs Cross-Border Exit/Entry Points

Let **Yijk** represent the total amount traded on the kth trip of the jth individual for the ith combination of product and mode. That is, Yijk may be viewed as a measurement of both formal (recorded) and informal (unrecorded) trade. Likewise, let **Xijk** represent the amount recorded for the kth trip of the jth individual for the ith combination of product and mode. This data can then be used to characterize the conditional distribution of Yijk given Xijk:

$$f(Yijk | Xijk)$$

Finally, let Zijk represent the number of individuals carrying Yijk and reporting Xijk. Then Zijk provides the information necessary to characterize the marginal distribution of the scenarios, or the recorded amounts Xijk:

$$f(Xijk)$$

The product of these two distributions gives an estimate of the joint distribution from which the marginal distribution of the total volume traded $f(Yijk)$ can be derived.

The details on how the conditional distribution $f(Yijk | Xijk)$ was estimated is explained in 4.5b below. Graphical summaries suggest a linear relationship between Yijk and Xijk. This relationship also holds on the log scale. The equation for the linear relationship, however, depends on the combination of product and mode. Graphical summaries suggest that the conditional variance $[\text{var}(Yijk | Xijk)]$ increases proportionally with the mean $[E(Xijk)]$. An appropriate analysis would be a random coefficient regression model that allowed the variance to increase with the mean. For computational convenience, a software package was used that fits a random coefficient Poisson regression model. A more detailed description of the model is provided in Appendix II and is based on earlier work by statisticians Breslow, Clayton, and Littell and others (Breslow and Clayton 1993; Littell et.al. 1996).

The predicted values were graphically compared for each product mode combination included in the analysis using side-by-side box plots. The amount of unreported volume was also compared. Inferences about the mean volume traded per trip by product, mode of trade (e.g., truck), and year can be made using the sample representing the marginal distribution of Yijk. A sample totaling 8,657 different trade volumes representing the experts' opinions on the amount of trade per trip was generated. For each mode and product combination, estimates and confidence intervals were produced for the mean volume by year, and for the difference in mean volume of trade across years. (The confidence intervals for means assume normality for the error distribution.)

Methodology for Estimating the Distribution of Recorded and Unrecorded Trade Volume of Ghanaian Export Products Crossing at Official Customs Cross-Border Exit/Entry Points

The elicited expert opinion was used to construct a model for the conditional distribution of the total trade volume Y (recorded and unrecorded) given the recorded trade volume X . Specifically, let Y_{ijk} represent the total amount traded on the k th trip of the j th individual for the i th combination of product and mode. That is, Y_{ijk} may be viewed as a measurement of both recorded and unrecorded trade. The Y_{ijk} may also be viewed as missing data that can be estimated using the conditional distribution of Y_{ijk} given X_{ijk} :

$$f(Y_{ijk} | X_{ijk})$$

Elicited expert opinion data was used to form a regression model to serve as a missing data model to estimate Y_{ijk} . The details on how the conditional distribution $f(Y_{ijk} | X_{ijk})$ was estimated are provided in the appendix. The product of these two distributions $f(X_{ijk})$ and $f(Y_{ijk} | X_{ijk})$ gives an estimate of the joint distribution $f(S_{ijk}, Y_{ijk})$ from which the marginal distribution of the total volume traded $f(Y_{ijk})$ can be derived.

The above model did not account for unofficial trips where a trader would avoid a formal exit/entry point completely. Therefore the proportion of crossings unrecorded with a Customs officer was also elicited from opinions of two groups of experts. Let Y_{il} represent the total trade recorded and unrecorded by Customs officers for the i th combination of product and mode of crossing at the l th exit/entry point. The total amount of trade recorded and unrecorded at formal crossing points and at informal crossing points that avoided Customs officers was estimated to be:

$$Z_{il} = Y_{il}/(1-p_{il})$$

where p_{il} is the proportion of crossings that avoid Customs officers for the i th combination of product and mode at the l th exit/entry point. The final estimate of total trade for the i th combination of product and mode at the l th port was estimated to be the average of the two individual estimates obtained from the two data sets or imputed from data augmentation.

Product Selection

The products selected for the study were: maize, salt, tomatoes, aluminum kitchen and table utensils, and iron rods. These products were selected because of their importance to food security (maize), their value-added processing occurring in Ghana (iron rods, aluminum products), their comparative advantage based on available Ghanaian resources (salt), and/or because women occupied critical roles in the trading of the commodity (tomatoes, aluminum products).

Sampling Technique and Questionnaire Administration

There was no list available for researchers of formal and informal traders. Therefore "experts" at each of the three border crossings were asked to provide a list of potential questionnaire respondents which would comprise a convenient sample of informal and formal traders. The

questionnaire was administered to 124 traders and was designed to obtain information on the activities of traders related to the cross-border exchange of goods, and the socio-economic relationships they had established to facilitate this exchange.

Fieldwork

The fieldwork consisted of two phases: a reconnaissance phase, and a data gathering phase. The reconnaissance phase involved site visits by the researchers to select the three specific border crossing points, to interview area persons knowledgeable of area trans-border trade flows, and to begin to identify "experts". During these initial site visits formal data collection efforts were also observed. Customs and MOTI officials were briefed on the objectives of the study and their cooperation was secured. The reconnaissance phase was completed in September 1997.

The second phase was data gathering. This phase commenced in February 1998 and was completed in April 1998. During this phase "experts" in Elubo, Aflao, and the Bawku area were identified and interviewed. Subsequent to these interviews the questionnaires were administered to "experts" and to formal and informal traders identified by the "experts." The total questionnaires administered were 124. The number of "experts" and traders who completed the questionnaire at each border crossing are detailed in Table 2.

TABLE 2: Number of Questionnaires Administered to Traders and "Experts" at Each Border Crossing Site

Border Crossing	Number of "Experts"	Number of Traders
Aflao	5	43
Elubo	6	41
Bawku*	9	40

Source: Field Survey Data, 1997-1998.

*Bawku includes the northern exit/entry points of Paga, Kulungungu and Pulimakom.

3. FINDINGS

Data obtained from selected traders on the relationships they had established to facilitate their trade, and their behavior in circumventing specific obstacles to that trade are reported in the following section.

Respondent Characteristics

The information obtained on selected traders was accomplished by utilizing a convenient sample

which was administered in 1998. There were 77 female and 47 male traders interviewed whose responses were useable in the analysis. Approximately 33% of the 124 respondents were interviewed at each of the three interview sites. Slightly more than one-half (52%) of the interviewed traders indicated they were literate. Of those who were literate, the majority of them (52%) had completed schooling through the elementary level.

Length/Frequency of Involvement in Cross-Border Trade Activities

The majority of interviewed traders (75%) had been involved in cross-border trading activities for 10 years or less. More than one-half of the traders (60%) indicated their frequency of cross-border trade activities was two or more times per month (33% of respondents (41) traded twice per month).

Social and Business Linkages of Traders

Surveyed traders were asked to indicate how various social (kinship, religious, tribal) and business (financing, business associates, associations) linkages affected their trading activities. Social linkages are discussed first.

Of the 91 traders who responded to the question "How does kinship affect your trading activities?" 74% of the men and 77% of the women answered that kinship facilitated their trading activities. Kinship facilitation included the extension of short-term credit, storage, and travel assistance. Religious affiliation was more important to men (59% of male respondents) than women (39% of female respondents). The researchers hypothesize that for men who are Moslem, credit and other business transactions are facilitated through this religious affiliation. Tribal affiliation is similar in importance for female (45%) and male respondents (43%). For men tribal linkages are the least important of the three social linkages. No explanation was offered to clarify the type of trade facilitation activities that tribal linkages encouraged.

Mode of Transport and Type of Border Crossing

The truck is the predominant form of transport used by traders to transport their type A products¹ across the border (Table 3). If a trader is involved in trading several different types of commodities across the border, they might use various means of transportation (e.g., truck, pushcart, headloader). Pushcarts are prominent at the Aflao border crossing between Ghana and Togo. Donkey carts are used only in Northern Ghana along the Ghana-Togo and Ghana-Burkina Faso borders. Boats are used at the Elubo border crossing between Ghana and the Ivory Coast, and between Togo and Ghana in the Aflao area. The use of boats at the latter border area crossings has resulted in an increase in smuggling in the last ten years, especially by smugglers in high speed motor boats which can evade the slower, older Customs boats.

¹Type A,B,C products earned the highest revenue, the second highest revenue, and the third highest revenue respectively for the trader.

Table 3: Method of Transportation Utilized by Cross-Border Traders for Product A*

Method of Transportation	Number** and Percent of Respondents Utilizing Transport Method
Hire Private Truck	70 (60%)
Headloaders	16 (14%)
Government Transport (bus)	11 (9%)
Pushcarts	9 (8%)
Donkey Carts	8 (7%)
Other Methods (bicycle, boat etc.)	3 (3%)

Source: Field Survey Data, 1998.

*Product A generates the most revenue for the trader.

**Total number of respondents is 117.

Disaggregating the method of transport and the formal/informal method of border crossing by type of product category (A, B, C) highlights regional geographic differences in Ghana.

Aflao. At Aflao, approximately 90% of the type A products cross the border formally, and 10% informally. Type B and C products follow a similar pattern. The major mode of transport for type A products is the pushcart (42%) followed by the truck (37%) and headloading (20%). For all goods (A, B and C) that the respondent trades across the border the pushcart is the most utilized (42%) transport mode. Besides the pushcart, headloading (29%) and cargo truck (19%) are also used for all three products.

Elubo. The Elubo crossing is the least "open" of the three border interview sites. This situation generally compels over 90% of the traders of all three types of products (A,B, C) to use the formal crossing. Some informal crossings by small canoes across the river bordering Ghana and the Ivory Coast were observed by interviewers, though no one interviewed spoke of this type of crossing. For product A crossings over two-thirds of the traders use truck transport(84%). For the remaining products, half of them cross as passenger goods in state transport buses (seating 60 passengers). The other half cross in private cargo/passenger trucks.

Bawku. In the north the Bawku border site presents a varied pattern. Of the type A products, 36 products (61%) cross formally and 23 products (39%) cross informally. Mode of transport used in border crossings for type A products reflects the increased incidence of informally crossing: 50% headloading and 39% truck. (Headloaders are usually not required to complete formal crossing forms.) Type B products (20 products total) follow a similar pattern of crossing (55%

formally cross the border). Both formal and informal crossings of type B products use similar modes of transport which include headload (35%), donkey cart (15%), or truck (5%). The majority of type C products (10 products total) cross formally (70%) by either headload (79%) or truck (30%).

All Three Border Crossings. Combining the three border sites a pattern of truck transport and crossing formally emerges among traders, especially among respondents for type A products. Approximately 85% of type A products cross the border formally, and 15% cross informally. The dominant mode of transportation of type A products at formal crossing points is the truck (53%) with Elubo traders indicating the highest incidence of truck use (84%) (Table 4). Headloading (27%) and pushcart (19%) represent the second and third most frequent transport modes for Product A formal crossings. For informal crossings trucks and bicycles are the main form of goods transport.

Table 4: Method of Transportation Utilized by Traders for Product A* by Formal Border Crossing

BORDER SITE	# and % Using Truck	# and % Using Cart*	# and % Using Headload	Total*** Respondents for Site
Aflao	15 (37%)	17 (42%)	8 (20%)	41
Elubo	32 (84%)	2 (5%)	4 (11%)	38
Bawku**	15 (39%)	3 (8%)	19 (50%)	38
TOTAL	62 (53%)	22 (19%)	31 (26%)	117

Source: Field Survey Data, 1998.

*Product A generates the most revenue for the trader.

**At the Bawku border site "cart" would include both pushcart and donkey cart. Bawku includes the northern exit/entry points of Paga, Kulungungu, and Pulimakom.

***Total respondents do not equal row totals for Aflao and Bawku because one trader at each site utilized a different means of transportation than the categories presented in Table 11.

The pattern for type B products (57 in total) is to cross formally (84%) by truck (51%). Headloading and pushcart forms of transportation are second and third respectively. Type C products follow a pattern similar to type B products. Bawku was the only one of the three border crossings that recorded the use of donkeys for transport of goods. Aflao was the only crossing reporting the use of pushcarts, and Elubo was the only crossing reporting bicycles.

How Respondent Handles Cross-Border Issues

Respondents were asked to explain how they handle specific operational issues associated with cross-border trade. These operational issues included paperwork completion, financing, money

conversion, and storage requirements. Respondent traders were asked to list the most important obstacle to cross-border trade they experienced (Table 5). The obstacle most frequently cited by those who responded was government inspections (30 respondents or 29%). Numerous roadblocks by police and CEPS officials was the second most frequently cited obstacle, and extortion by Francophone Customs officers was third. Other obstacles listed as important (though no more than 7 respondents indicated these as problem areas) included bribes to CEPS officials, border Customs procedures, and duty rates.

Table 5: Most Important Obstacle to Cross-Border Trade

Most Important Obstacle	Number of Respondents*	Percent of Respondents
Government Inspections	30	24 %
Numerous CEPS/Police Roadblocks	22	18 %
Extortion by Doune**	19	15 %

Source: Field Survey Data, 1998.

*A total of 105 respondents answered this question.

** Doune is the Francophone counterpart of the Ghanaian Customs officers in charge of collecting export/import duties.

Respondents were then asked to approximate the cost of the obstacle to them, both in terms of monetary costs and time lost. More respondents (70 traders) were able to calculate the time lost due to the obstacle than the monetary cost (56 traders). A summary of these responses is presented in Table 6.

Table 6: Monetary and Time Costs Paid by Traders Resulting from Most Important Obstacle to Cross-Border Traders

Monetary Cost of Obstacle	Lost Daily Wages in Local Currency*	Number of Respondents**	Percent of Respondents
< USD 10	<1 up to 7.5 days in lost wages	23	41 %
USD 10 to USD 25	8 to 18.5 days in lost wages	18	32 %
> USD 25	19 days + in lost wages	15	27 %
Time Cost of Obstacle			
< 1 hour	< USD .25	17	24 %
1-5 hours	USD .25 to USD 1.25	36	51 %
> 5 hours	> USD 1.25	17	24 %

Source: Field Survey Data, 1998.

*GDP per capita for Ghana between 1990-1996 was used as a proxy annual income measure for Ghanaian traders. Based on this proxy annual income measure of USD 390, monthly income was estimated to be USD 32.50, daily income was USD 1.35 (assuming some work activity 6 days per week), and hourly income was USD .25.

**A total of 56 respondents answered the monetary cost question, and a total of 70 respondents answered the time loss question.

Approximately 67% of the respondents (41) reported USD 25 or less in monetary costs associated with the obstacle they listed as the most important impediment to cross-border trade. Over half of the respondents (36 or 51%) indicated they lost from 1 to 5 hours as a result of the obstacle. This information can be used as a proxy for the measurement of costs associated with frequent inspections (whether official or unofficial) endured by cross-border traders.

Though no specific data on annual or monthly cross-border trader income is available, it is possible to estimate the cost to traders by using GDP per capita as a proxy income measure. The GDP per capita for Ghana between 1990-1996 was USD 390. Based on a USD 390 annual

income, monthly income was estimated at USD 32.50, daily income USD 1.35 (assuming some work activity 6 days per week), and hourly income USD .25. Given the relatively low wage rate in Ghana (\$1.00 per day for unskilled labor was not uncommon in 1996), the data on costs in Table 6 emphasizes the heavy economic burden on cross-border traders of numerous inspections and extortion by government officials. Of those traders who responded, more than half of them (57%) lost 8 or more days in lost wages when their monetary cost is defined in terms of income. When their loss of time is equated in monetary terms, their USD equivalent amount is low because of the relatively low wage rate in Ghana. The majority of traders (86 of 124 respondents or 69 %) made more than one round trip cross-border trade crossing per month. Of this group of 86 traders, 34 traders made more than 3 round trip cross-border excursions per month. The researchers believed the cost data supplied by traders was based on monthly estimates, rather than per trip estimates.²

Some of the above costs can be justified on health and/or plant/animal protection grounds (e.g., government procedures associated with the agricultural inspection of food for diseases). Other costs associated with obstacles such as numerous roadblocks by CEPS and police disrupt commercial activity and appear to be administered without any particular pattern or objective. (Researchers experienced more than 10 roadblocks between the Aflao border and Accra, a distance of less than 140 kilometers.)

Data Estimating Total Overland Trade Flows For Selected Ghana Exports³

Data was available for estimating the conditional distribution of total trade volume for the product mode combinations listed in Table 7.

² As mentioned earlier in this study, the removal of medieval roadblocks in Europe is credited with marking the beginning of an economic Renaissance on that continent. The Government of Ghana could contribute to a resurgence of regional trade by removing unnecessary inspections and roadblocks which impede trans-border trade flows.

³Data presented in this section is from the statistical work done by Dr. Panickos A. Palettas and Dr. Robert M. Leighty Department of Statistics Ohio State University.

Table 7: Product Mode Combinations for Distribution of Total Trade Volume

Mode of Crossing	Product
Truck	Aluminum Products
Truck	Iron Rods
Truck	Maize
Truck	Salt
Truck	Tomatoes
Pushcart	Maize
Headloader	Tomatoes

For product combinations that were not listed above, three separate marginal distributions, one for each of the three modes, were used as estimates of the conditional distributions.

Based on estimated data provided by experts, Table 8 provides information on recorded trade volume and estimated trade volume by product, and border crossing point. The physical characteristics of the product and the mode of transportation used to carry it across the border frequently determine whether formal Customs documents are completed. Iron rods and salt are usually transported in large quantities by truck. According to the experts most trucks (but not all trucks) were stopped by Customs officers and inspected, and the value and volume of their loads recorded. Thus there is little difference between recorded and unrecorded trade values for iron rods (less than 5%). Salt had slightly higher differences (6% to 7%) between recorded and unrecorded trade values (and also higher standard deviations) because salt is also transported in smaller quantities which can be headloaded or carried in cars etc. which often is unreported at border crossings.

Maize estimates were only recorded for the Aflao border crossing. The differences in maize recorded and unrecorded trade data (16%) can also be explained by the transporting of maize in various smaller quantities using headload or pushcart. Generally recorded maize data was from truckloads of maize passing through border crossing points.

Table 8: 1996 Total Overland Trade by Product and Exit/Entry Point (reported in kilos)

Border Crossing	Product	Recorded Trade*	Total Trade **	Percent Unrecorded
Aflao	Alum Pds	336,297	358,168	6 %
Aflao	Iron Rods	87,000	89,897	3 %
Aflao	Maize	16,008,922	19,157,117	16 %
Aflao	Salt	6,934,174	7,402,604	6 %
Aflao	Tomato	1,510,258	7,746,643	81 %
Bawku***	Alum Pds	288	370	22 %
Bawku	Iron Rods	366,000	377,089	3 %
Bawku	Salt	43,918,450	46,740,503	6 %
Bawku	Tomato	1,038,335	3,269,559	68 %
Elubo	Alum Pds	853	1,085	21 %
Elubo	Iron Rods	185,000	191,607	3 %
Elubo	Salt	1,490,000	1,609,951	7 %

Source: Trade estimations based on field work 1998-1999 and statistical estimations by Palettas and Leighty.

*Recorded Trade represents monthly recorded total trade volume through the border.

**Total Trade represents monthly trade of recorded and estimated unrecorded trade through the border adjusted for the estimated amount of trade that avoided the formal crossing point.

***Bawku area crossing includes border crossings at Kulungugu, Pulimakom, and Paga.

The majority of the volume of aluminum products was recorded at Aflao (only 6% was estimated to be unrecorded) because one firm in Accra accounts for most of the aluminum products exported from that border area. Also expeditors frequently "bundle" smaller aluminum products shipments into one consignment that is registered with Customs officers as one export shipment. Some aluminum cookware is headloaded or pushcarted across overland border crossing points at Elubo and the Bawku area which accounts for differences in recorded and unrecorded trade (21% and 22% respectively) at these two border crossing points.

The majority of recorded data for tomatoes was from trucks carrying tomatoes which crossed at the formal border crossing point. At both Aflao and Bawku area crossings the most frequent mode of transporting tomatoes across the border is headloading. Tomatoes usually did not cross

the border at formal crossing points because of the frequent use of headloading which made it relatively easier to use traditional footpaths or livestock trails. Commodities that are headloaded are generally not recorded by Customs officers as part of official trade data. Thus there are large differences between recorded and unrecorded trade at both the Aflao and Bawku exit/entry points (81% at Aflao and 68% at the Bawku area).

The majority of tomatoes are grown in northern Ghana. With no tomato processing plant currently in operation, and the high perishability of the crop, tomatoes are harvested and headloaded across the northern and northeastern borders of Ghana using a maze of footpaths. Because of improved highways linking northern Ghana with Accra, tomatoes are also brought south to the capital and sold there or cross the border informally to be sold in Lome, Togo (less than 140 kilometers from Accra).

When the estimated and recorded volume of all five products were aggregated for each of the three border crossings (Table 9), the Aflao area crossing recorded the highest percentage of unrecorded trade (28%), with the Bawku area second (10%), and Elubo third (7%). The southeastern corner of Ghana where the Aflao crossing was located was a very fluid border. Since tomatoes were frequently headloaded along these paths across international borders, and tomatoes were one of the five product groups selected for inclusion in the study, the high percentage of unrecorded trade at the Aflao crossing was not surprising. Similarly, tomatoes were also headloaded through the Bawku area crossings, and there were numerous alternative paths into both Togo and Burkina Faso in that area as well. Elubo, the eastern border crossing point between Ghana and the Ivory Coast, is located on the Tano River.

Table 9: 1996 Total Overland Trade by Exit/Entry Point

Border Crossing	Recorded Trade (kilos)*	Total Trade (kilos)**	Percent Unrecorded
Aflao	24,876,651	34,754,430	28 %
Bawku***	45,323,073	50,387,520	10 %
Elubo	1,675,853	1,802,643	7 %

Source: Trade estimations based on field work 1998-1999 and statistical estimations by Palettas and Leighty.

*Recorded Trade represents monthly recorded total trade volume through the border.

**Total Trade represents monthly trade of recorded and estimated unrecorded trade through the border adjusted for the estimated amount of trade that avoided the formal crossing point.

***Bawku area crossing includes border crossings at Kulungugu, Pulimakom, and Paga.

The Tano River provides a geographical barrier which makes it more difficult to circumvent the formal crossing point at Elubo, where there is a bridge. Also, tomatoes (which appeared to

account for most of the unrecorded trade among the five selected products) were not usually a product which crossed the border at Elubo according to the experts.

Thus the estimated data provided by experts on recorded and unrecorded trade flows for the five commodities at each of the three border crossing points provided information that corroborated geographical and socio-economic information about overland trade flows in Ghana.

4. POLICY IMPLICATIONS AND RECOMMENDATIONS

The following policy implications and recommendations have been identified by the researchers:

1. There is a positive impact from liberalized trade procedures.

Liberalized trade procedures for exports have had a positive impact on cross-border trade reporting. More formal border crossings have been recorded, which has increased the precision of cross-border trade data. According to Customs personnel and traders, formal border crossings are more efficiently handled. The new Ghana export form has streamlined trade declaration procedures and reduced the time required to complete the form from days to hours. Financial liberalization has meant traders can obtain foreign currency from the FOREX bureaus and do not have to complete complicated banking forms.

2. Government regulations that impede overland trade, and/or increase the transaction costs of overland trade, negatively impact on the economic growth of Ghana.

The obstacle listed as most important by cross-border trader respondents was government inspections (30 of 105 respondents or 29%). Numerous roadblocks by police and CEPS officials was the second most frequently cited obstacle, and extortion by Francophone Customs officers was third. When asked to approximate the monetary and time cost to them from these obstacles, approximately 67% of the respondents (41) reported USD 25 or less in monetary costs associated with the obstacle they listed as the most important impediment. Over half of the respondents (36 or 51%) indicated they lost from 1 to 5 hours as a result of the obstacle. More than half of the respondents (57%) lost 8 or more days in lost wages (per month) when their monetary cost was defined in terms of income.

Government policies and regulations should be designed to encourage not only overseas trade, but trade within the sub-region as well. Ghana and other West African countries showed export similarity index values indicating relative dissimilar patterns of trade which indicated a basis for trade exists between countries in the sub-region. Trans-border trade is typically handled by traders with fewer assets than overseas traders. More women are involved in trans-border trade than overseas trade; and thus its economic impact is felt by

middle and lower-income households in Ghana. However, the positive economic impact resulting from cross-border trade activity can be easily nullified if unnecessary roadblocks and inspections impede the flow of goods and services across national borders.

3. Police/military personnel are more likely than Customs representatives to demand additional payments from traders.

Traders complained more often about police/military road blocks than road blocks manned by Customs personnel. Road block objectives and procedures should be examined, with a view towards reducing their number to the strict minimum necessary for security. The economic consequences of roadblocks (particularly their effects on trade flows) should be calculated and the results presented to the appropriate policy units within MOTI, CEPS, and MOFA. The administration of road blocks and their procedures for examination of commodities should be under the jurisdiction of one government agency and not several as is currently the case.

4. Increased border cooperation between Ghana and her neighbors would avoid unnecessary unloading and re-packing at exit/entry points, **and would encourage the uniform application of tariffs.**

There is already some cooperation between border crossing points such that articulated trucks which have been inspected on one side of the border are not required to be inspected on the other side of the border. Cooperation is more apparent between Ghana and Togo than between Ghana and the Ivory Coast.

5. ECOWAS tariff agreements need to be uniformly applied on both sides of the border.

Though changes in the ECOWAS tariff structure have been passed by governments in the sub-region, they have not been made operational in some cases and are not applied uniformly. Implementing the current treaty provisions would greatly enhance the efficiency of regional trade.

6. Illegal goods are auctioned using more transparent procedures.

Illegal goods that have been seized by Customs agents are now publicly auctioned at routine intervals making these procedures more transparent. The seized goods are publicly warehoused until the auction occurs.

7. Lack of adequate sea supervision increases smuggling along Ghana's shoreline.

A lack of motorized "fast" boats makes it difficult for Customs personnel to apprehend smugglers in waters off the coast of Ghana. This type of smuggling usually involves goods of high value (including arms and drugs), so the risk to smugglers is more than balanced by their gain in avoiding contact with government officials, and in not paying the required taxes and fees.

8. Currently unused buildings at Aflao border crossing could be utilized for cross-border trade activities.

Current unused buildings at the Aflao border crossing could be rehabilitated and used to accommodate cross-border trade storage requirements. These buildings could be repaired through a government-private sector partnership, with government facilitating permit and sale requirements, and the private sector purchasing and reconditioning the buildings. Once the buildings were operational and rented-out, government could collect rent on them until its costs had been reimbursed.

9. Short-term and medium-term financing is a problem for traders.

The lack of short-term and medium-term financing for small business owners means traders often can not buy in bulk and must buy those items for which there is a quick turnaround. Credit, when it is extended, must usually be repaid in a few hours or days. The lack of financing results in the market at times becoming saturated with too many traders selling nearly identical items that possess the quick turnaround characteristic.

10. Kinship and association linkages are especially important for female traders.

Female traders more than male traders relied on kinship and association linkages to complete trade transactions. Association linkages should be strengthened and provide members with a unified voice with which to articulate their problems to Customs officials and other governmental authorities. Associations could also offer members opportunities to utilize economies of scale in bulk purchasing and hiring of transportation.

11. "Expert" estimation procedures provide a low cost alternative methodology for measuring cross-border trade flows.

Estimation procedures that rely on "experts" (people with specialized knowledge of cross-border trade flows) to provide trade data information use a relatively low-cost methodology to obtain information on cross-border trade flows. Using the Aflao border crossing as an example, the estimated data provided by "experts" illustrated that 28% of overland trade in the five products examined in the study was unrecorded. While this research used experts to obtain trade flow information on only five products at three border crossings, the model could easily be expanded to include additional commodities

and border crossings.

12. Infrastructure Improvements Focused on Overseas Trade and not Trans-border Trade.

Recent improvements in infrastructure at the port of Tema and Katoka International airport have been completed to facilitate overseas import/export trade. There is an excellent all-weather northern road linking Tamale and Paga to Burkina Faso which was completed in 1997. Other roads linking border towns are less roadworthy, and often impassable in the rainy season. Telecommunications are more reliable between Ghana and overseas cities than between Ghanaian cities. Fax communications and cellular technology are similarly erratic between points within Ghana, and between Ghana and the rest of the sub-region. (Traders commented that it was easier to telephone someone in Los Angeles than speak with someone in Cape Coast, Paga, or Niger!) Ghana's basic infrastructure (especially its provision and delivery of electricity) is worse than other countries in the sub-region.⁴

13. Project advisory committee members involvement strengthened ownership in the research results.

The project advisory committee selected specifically for this project included members from MOTI, CEPS, USAID, MOFA and several cross-border traders. This committee was involved in product selection, border exit/entry selection, and questionnaire review. Members have been given periodic updates on research progress. Results of the project are scheduled to be presented to them in Accra. As the government committee members are all mid-level policymakers, the researchers are optimistic that results from the research will be disseminated throughout the government and will generate additional discussion on cross-border trade issues.

⁴The unfavorable comparison of the basic infrastructure of Ghana with other countries in the sub-region was reported in an unpublished June 1998 project appraisal document under the auspices of the Ghana Trade and Investment Gateway Project.

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