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**OF MARKETS AND MIDDLEMEN:
THE ROLE OF BROKERS IN ETHIOPIA**

by

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ABSTRACT

Using survey data on traders and brokers in the Ethiopian foodgrain market, this paper reveals that the brokerage institution is critical to market performance in that it enables traders to circumvent the commitment problem of long-distance trade with unknown partners. In the absence of grain standardization, public information, and legal contract enforcement, brokers act as inspectors and guarantors of each transaction. The paper analyzes the sources of commitment failure, the role and functions of brokers and the extent of brokerage use by brokers and argues that agency relations are not based on ethnicity, depend on effective reputation rather than trust, and are structured in an incentive-compatible manner.

1. INTRODUCTION

The effective functioning of foodgrain markets is vital to economic growth and to national food security. However, following Polanyi (1957), it is widely recognized that market transactions, particularly in developing countries, are frequently *embedded* in long-term, personalized, relationships (Granovetter 1985; Plattner 1989; Harriss-White 1993). At the same time, North and Thomas (1973) have argued strongly that the evolution from personalized exchange to impersonal or anonymous exchange, supported by legal systems that enforce contracts, is central to the process of growth and development. In the absence of formalized market institutions that deter dishonest behavior, such as credit bureaus, trade inspection services, and commercial tribunals, what institutions arise that promote trade among unknown parties?

This paper analyzes the features and structure of the institution of grain brokers in the Ethiopian grain market. Using primary data collected in a survey of 169 Ethiopian traders and brokers in 12 markets, this paper has two objectives. First, the paper seeks to demonstrate that brokers, operating as intermediaries or commission agents in the exchange of grain between wholesalers, enable these wholesalers to circumvent the commitment failure problem that is intrinsic to

long-distance trade with unknown partners in a market with weak information and limited contract enforcement. Second, the paper addresses the agency relations prevailing between wholesalers (traders) and brokers and demonstrates that the brokerage institution is sustained by underlying incentive-compatible norms that limit conflict between traders and brokers.

HISTORICAL AND COMPARATIVE INSTITUTIONAL PERSPECTIVES

Historical institutional analysis of pre-modern trade in medieval Europe by Milgrom et al. (1990) shows that an institution, known as the Law Merchant in 12th and 13th century Champagne fairs, enabled impersonal exchange to occur. The Law Merchant enabled trade through a reputation system that stored information about traders' past behavior and sanctioned violators of the commercial code.

Similarly, Greif (1993) views the Maghribi traders' coalition in the 11th century as a means of overcoming the commitment problem intrinsic to long distance trade. Clay (1993) shows that coalitions of long-distance traders in 19th century Mexican California promoted honest exchange through information sharing and punishing of cheaters. In contrast, Platteau (1994a, 1994b) argues that decentralized arrangements based on reputation are not sufficient to ensure honest behavior and that private and public-order institutions are necessary to create the social conditions for markets to operate.

Fafchamps (1996a) demonstrates theoretically that decentralized markets can spontaneously emerge in the presence of commitment failure, despite the absence of formal courts, if agents are sufficiently heterogeneous. However, economic efficiency is not fully realized as exchange is not anonymous and is based on mutual trust and information sharing. Kranton (1996) shows that less efficient personalized exchange relations, such as the reciprocal exchange of goods and services, can persist even when impersonal exchange is possible if the size of the personalized market is initially large, goods are homogenous, and individuals are interconnected in networks.

COMMITMENT FAILURE IN THE ETHIOPIAN GRAIN MARKET

In the Ethiopian grain market, the price of grain is not publicly known, grain is highly differentiated with no formal standardization and classification, and there are very limited legal means to enforce contracts (Dadi et al. 1992). These various constraints cause traders to be relatively easily cheated with regard to the appropriate market price, the quality and quantity of the delivered grain, or other contractual terms such as the timing of delivery, grain spoilage or loss during transport, *inter alia*. This commitment problem severely inhibits traders

from placing orders with other traders in distant markets or, in general, from trading with unknown merchants, even if they physically meet. Traders circumvent this problem through engaging the services of an established broker, who serves as an intermediary between partners who do not have a previous relationship and may never meet.

THE FUNCTION OF ETHIOPIAN GRAIN BROKERS

Brokers are agents, operating on a commission basis, who only transact on behalf of a principal. They are located permanently in the central market of Addis Ababa and are able to obtain market information relatively easily. There are approximately 40 established brokers in the *ehil berenda*, the country's central market in Addis Ababa, relative to a total of roughly 2500 licensed grain wholesalers in the entire country (Lirenso, 1993). Each broker has a clientele of regional traders, with whom he has cultivated a long-term relationship that may span generations.

Ethiopian grain brokers, known as *delala*, function in much the same way as commission agents or brokers in highly sophisticated market exchanges around the world. The main function of brokers in the Ethiopian central market is to facilitate market exchange through matching buyers and sellers who come from markets located in outlying regions. Secondly, brokers provide a mechanism for obtaining a market price at which goods clear the market, a function known as

price discovery on commodity exchanges.¹ In the Ethiopian grain market, brokers set a daily spot price for each type and origin of grain (30-40 different prices) through an implicit bidding process. Thus, each broker makes a rapid evaluation of the day's supply and demand, fixes a price, then adjusts it according to what other brokers have fixed, in a *tâtonnement* process which results in a single market price. The Ethiopian price discovery process closely resembles what is known as Ring trading in the London metals market, in which brokers determine the price of each metal within a pre-set time period through explicitly bidding on price (Gibson-Jarvie 1993).²

BROKERS IN OTHER DEVELOPING COUNTRIES

Brokerage in foodgrain markets is also documented elsewhere across Africa. N.W. Thomas (1908) reports historical evidence of brokers throughout northeast, and to a lesser extent central and western, Africa. Historically, brokers appear to have played a major role in the food trade of the western Sudan and are linked to the presence of Hausa traders (Cohen 1969; Meillassoux 1971; Jones 1972). Gilbert (1969) finds evidence of brokers in nearly all studied food markets in

¹ See Commodity Trading Manual, Chicago Board of Trade, 1989.

² Other examples of a similar system are found in the London bullion market which informally determines the London "Gold Fix," a daily gold price set by brokers.

northern Nigeria, where brokers, known as *dillali*, are generally of the dominant ethnic group. Hill (1966) documents the activities of “landlord-brokers” in food markets in the Kumasi market of Ghana, similar to the role of *logeurs* in Mali (Amselle 1969).

Elsewhere, Lele (1971) describes the role of Indian commission agents in the foodgrain market, known as *adatya* in Maharashtra or *dala* in Hindustani, who operate in a manner closely resembling that of Ethiopian brokers. Scott (1985) documents the existence of commission agents in the Cañete Valley of Peru, who facilitate exchange between potato producers in the Valley and wholesalers in Lima.

Thus, the same word, derived from Arabic, is used to describe brokers in Ethiopia (*delala*), Nigeria (*dillali*) and India (*dala*), possibly revealing that the practice of brokerage may originate in Muslim commercial practices. Pankhurst (1961) documents reports by Marco Polo of “merchants of all nations” trading in 12th century Ethiopia, while Alvarez (1881) describes the influence of foreign traders including “Moors, from Giada (Jeddah), Morocco, Fez, Tunis, Turks, Greeks, Moors from India, Ormuz, and Cairo” actively trading in Ethiopia in the 13th century.³ Jackson (1978) also notes the existence of Muslim-dominated trade routes transversing pre-modern Ethiopia.

³ Pankhurst, 1961, p. 307.

2. DATA AND SURVEY METHODS

THE STUDY AREAS

An extensive survey was carried out in 1996 by the author in seven regions of Ethiopia. These regions comprised 3 grain surplus areas— Wollega, Arsi, and Gojjam, and 3 grain deficit areas –Wollo, Tigray, and Hararghe— in addition to the central urban market of Addis Ababa. Wollega is a major maize-producing region, Arsi is a major wheat-producing region, and Gojjam is a major *teff* - producing region (Figure 1).

A total of 12 markets were selected on the basis of their importance as centers of wholesale grain trade and as transit points for grain flows across the country. Surveyed markets are Nekempte and Jaji in the Wollega region, Assela and Sagure in the Arsi region, Bahir Dar and Bure in the Gojjam region, Dessie and Kombolcha in the Wollo region, Mekele in the Tigray region, Dire Dawa and Harar in the Hararghe region, and Addis Ababa. The grains included in the study are principally *teff* (an indigenous grain uniquely unique to Ethiopia), wheat, and maize, although transaction data were also collected for barley, millet, and sorghum.

THE SURVEY

Panel data were obtained in two rounds of trader and broker surveys carried out in May-July 1996 and October-December 1996. In each market, a random selection of existing traders in the market was taken, given the unavailability of a reliable census of traders from official sources. The total sample includes 169 traders, comprised of 152 wholesale traders in 12 markets and 17 grain brokers in the Addis Ababa market.

Data were collected in the first round on traders' choices of trading arrangements, transfer costs, relations with brokers, market channels, traders' resources and assets, and demographic variables. A separate broker survey collected data on brokers' assets, client base, price formation, and transactions.

In the second round of the trader survey, in addition to data on traders' contractual choices and transfer costs, data were collected on traders' transaction costs of search, liquidity, and social capital. The second round of the broker survey collected data on price differentiation and quality parameters, social capital, and demographic variables. Although the government ban on private trade was lifted in 1990, traders remained suspicious of interviewers and reluctant to provide cost and flow information. Given the sensitivity of these data and their qualitative nature, the author's presence at nearly all interviews ensured a high level of quality of responses.

3. THE FUNCTIONS OF THE *DELALA*

Grain brokers operate from permanent market stalls in the central grain market, the *ehil berenda*, in Addis Ababa. On average, interviewed brokers handled transactions for clients in about 6 markets around the country, with an average of 60 clients per broker. Field interviews revealed that the amount of grain flowing through brokerage channels ranged from 1411 quintals per week (1.4 tons) in a low-volume month such as April to a high of 2789 quintals (2.8 tons) per week in a busy month such as January or February (Table 1). Roughly extrapolating these figures for the estimated number of 50 established brokers operating in the market results in 1,102 tons of grain handled weekly by Addis Ababa brokers, or 52,917 tons over the marketing year.⁴

Among the clients handled by each broker, the largest share were distant sellers, with an average of 38 seller clients per broker. In the case of distant sellers and distant buyers, brokers may handle orders exclusively by telephone. Interviewed brokers indicated that they could work solely by telephone with 77 percent of their seller clients and 20 percent of their buyer clients (Table 4). Thus, distant buyers are more likely to come themselves to the market. This may be due to

⁴ Lirensen (1993) estimates for 1992 that 342 regional wholesalers from 64 market towns shipped 1,354 tons weekly to 50 brokers.

the higher risk of commitment failure faced by buyers, who are more vulnerable to cheating on the quality or price of the grain.

For each transaction, the broker's functions can be broken down into six distinct services. Initially, prior to receiving a shipment of grain, the broker provides market information and business advice to a wholesaler client, who is interested in either selling or buying. Traders in distant markets will send a shipment of grain after consulting with their broker about prevailing market conditions and prices.

Once the grain is shipped, a second service provided by the broker is the receiving of grain in a given physical space. Even if the grain is not off-loaded from the transport vehicle, upon arrival in Addis Ababa, the truck is parked in front of the broker's stall. The parking space in front of the broker's stall represents the point of entry into the next day's trading, since the shipment of grain must be physically present and visible to incoming buyers.

Third, the broker fulfills the role of inspection and grading of the incoming grain. At the point of receiving the grain, in the case of a sales order, the broker inspects the sacks of grain on the truck. In order to ascertain the quality of the grain, the broker uses a pointed tubular device, known as *memermeria*, to take samples randomly from different sacks within a shipment. The broker's

experience in gauging grain qualities and his knowledge of current market conditions enables him to determine what the market-clearing price of each quality and type of grain is.

Fourth, brokers set the market price for each of the types of grain they receive. According to interviewed brokers, brokers each set an average of 7.30 prices daily. The time required for brokers to set prices ranges between 15 and 30 minutes, or about 6 minutes per price (Table 2). The price discovery function of brokers involves an evaluation of the day's supply and demand conditions prior to the start of the market day at 6 am. Using the previous day's closing price as a basis, brokers "fix" a market price for each quality of grain they have received from regional clients. They each informally conduct a survey of prices simultaneously announced by other brokers that handle the same origins and types of grain, after which they may adjust the price accordingly. Within a few minutes, this process results in a single daily spot price for each grain, by type, regional origin, and quality. Field observations revealed that there were roughly 40 to 50 different prices of grain daily, varying by type of grain, region of origin, variety, and quality, set by brokers in the Addis Ababa market.

Brokers indicated that the daily spot price might hold for the entire period of a day's trading, between 6 and 9 am. Typically, however, the price changes 1 to 2 times in the trading period, as brokers try to clear remaining supplies of grain.

Thus, two-thirds of the sampled brokers revealed that the market price changes two or three times daily.

Fifth, brokers search for buyers or sellers of grain on behalf of their clients. The search process involves extensively discussing with other brokers, touring the marketplace by foot talking to buyers, and having assistants standing on top of trucks shouting out the available types and qualities of grain.

At the point of sale or purchase, a sixth service provided by brokers is arranging the handling of the grain, for which each broker has a staff of laborers who off-load, re-sack, and weigh grain for a fixed fee. Brokers handle transport logistics either through paying the transport fees of the transporter out of the sales proceeds or arranging for transport for a buyer.

When a sale is completed on behalf of a client, brokers deduct their commission and remit the funds to the regional seller. If the grain has not been sold and the seller is short of funds, brokers may extend sales advance to valued clients.

Brokers indicated that they provide this service to roughly 40 percent of their clientele (Table 1). Unsold grain is off-loaded to the broker's warehouse where it is stored for a monthly rental fee. Brokers reported an average capacity of 938 quintals (9.4 tons), of which close to 200 quintals (20 percent) , were of client's unsold stock (Table 1).

Depending on their relationship with their client, brokers may provide buyer credit up to 30 days. Brokers consider offering this service to approximately one-third of all their clients (Table 1).

4. THE INCIDENCE OF BROKERAGE USE

In addition to using brokers, traders can also use an agent, a salaried employee who is located in a different market and acts as an agent on their behalf or exchange directly themselves with a buyer or a seller. Each of these three arrangements can occur either in the same market in which the trader is located or in an outside market, resulting in six different choices for exchange.

The choice of brokerage by traders varies according to the *type* (sale versus purchase) of transaction as well as the *location* (surplus, deficit, or central zone) of the transaction. Thus, traders in markets located in surplus regions (42 percent of sample respondents) exhibit different choices than traders in deficit regions (34 percent of sample) and traders in the central market (24 percent of sample).

THE USE OF BROKERAGE BY MARKET AND TRANSACTION TYPE

Traders in surplus regions reported use of local brokers for 7.5 percent of all transactions and of distant brokers for 15.4 percent of all purchase transactions. In contrast, they used local brokers for 9.4 percent of all sales and distant brokers for 47.1 percent of all sales transactions. The low incidence of

brokerage for purchases is due to purchases directly from farmers, while the higher share of distant brokerage for sales is due to their sales of grain in the central market of Addis Ababa (Figure 2).⁵

In the case of traders located in deficit zones, traders indicated using local brokers for 17.8 percent of all purchases and distant brokers for 31.6 percent of all purchases. The use of brokerage for sales by traders in deficit markets was significantly lower, 7.1 percent of local brokers and 3.1 percent of distant brokers. This pattern is due to the fact that traders sold grain directly to local retailers as well as consumers.

Finally, due to their location, central market traders only use local brokerage, with 10.8 percent for local purchases and 7.4 percent for local sales, and no distant brokerage at all, since central market traders tend to make transactions only locally. Wholesalers in the central market can buy directly from regional sellers who bring grain to the central market and can sell directly to local retailers, consumers, and millers.

⁵ The data used are self-reported figures provided by traders, recalling transactions over a six-month horizon. Given the low frequency of transactions, the recall period does not greatly increase error. Two observations of contractual choice data were gathered from two survey rounds. The results of the two rounds have been pooled, which provides a better estimation of the true values. Correlations between rounds are significant for data on the use of brokers and of self-search.

For the sample of traders as a whole, without distinguishing by type of transaction, brokerage is used in roughly one-quarter of all transactions. Traders search on their own, either locally or in distant markets, in 72 percent of transactions (Table 3). These results are revealing in that, while the majority of traders (85 percent) indicate using brokers regularly in their transactions, the actual incidence of brokerage is low relative to direct trade. The co-existence of direct exchange and brokerage appears linked to the use of brokers for transactions in distant markets, sales for surplus market sellers and purchases for deficit market buyers.

5. COMMITMENT FAILURE AND THE ROLE OF BROKERS

The geographic dispersion of supply and demand centers of grain in Ethiopia necessitates transfers of grain over long distances. However, relations among traders located in different regions are characterized by a commitment problem. The commitment problem arises because traders have limited information about market conditions in distant markets and because neither the grain itself, nor the sacks in which it is transported, nor the contractual terms under which it exchanges hands are standardized across all parties in the market.

SOURCES OF COMMITMENT FAILURE IN LONG-DISTANCE TRADE

Interviewed traders reported that partners can, and do, cheat by delivering a lower quality of grain than was discussed at the time of sale. Since there are no official inspections of grain, a trader who contacts a partner by telephone is forced to take the partner's word at face value. Furthermore, grain quality can deteriorate in the course of storage or transport to the buyer.

The relevant parameters of quality for Ethiopian grain are color, taste, appearance of kernels, moisture content, impurity, breakage of kernels, and

baking qualities.⁶ These parameters, qualitative in nature, are open to considerably different interpretations. Traders can cheat by misquoting or omitting information on any of the above parameters at the time of oral agreement of the grain price. Furthermore, long-distance orders are placed by telephone with no legal contract, traders can cheat by denying contract terms.

Other opportunities to cheat are presented by the lack of standardized sacks. Traders indicate that sacks, re-used numerous times, vary dramatically in terms of the quantity they carry and their quality. Traders can cheat partners by having sacks that hold less than the 100 kilograms that they are presumed to hold (if the cheater is a seller). In small rural markets where there are no scales, traders are reported to cheat farmers routinely by buying grain in sacks that hold considerably more than 100 kilograms. Moreover, the practice of re-using sacks also creates room for opportunistic behavior. Traders report that buying a load of grain in the sacks of the selling merchant is undesirable because the seller will provide the oldest possible sacks, which are likely to tear and cause grain loss or damage over the course of transport.

The commitment problem is also a function of the point at which ownership of grain is transferred between partners. When a seller retains ownership, and

⁶ Brokers revealed in interviews that they use these parameters to determine the appropriate price.

concomitant risk, for a shipment of grain until it reaches the final destination, the trader is highly vulnerable to renegeing on the buyer's part. Similarly, if the buyer takes ownership of a load of grain at the seller's venue, the buyer is highly vulnerable to fraudulent representation of the grain or damage during transport.

In the event that cheating occurs, recourse to a legal third party is very limited in Ethiopia. In part, the lack of legal recourse is due to the time-consuming nature and inaccessibility of formal courts. Moreover, it is not customary for business partners to engage in legal suits, also true elsewhere in Africa (Berry, 1993). According to interviewed traders, a trader who has been cheated by a partner must return to the market in order to seek out the wrongdoer and engage in a public confrontation. When the partner is unfound or a settlement cannot be reached, the trader bears the loss.

THE ROLE OF BROKERS IN ALLEVIATING COMMITMENT FAILURE

This commitment problem causes traders to be extremely reluctant to trade with partners whom they don't know. Without an institution to promote trade, exchange between anonymous, long-distance, partners would rarely occur because traders would anticipate cheating by their partners. Yet there is ample evidence that grain is traded considerable distances around Ethiopia and that cheating is the exception, rather than the norm.

How does brokerage resolve the commitment problem? As neutral intermediaries, brokers are uniquely able to gather information from a large number of traders. The majority of interviewed traders asserted that the broker's access to traders and the broker's superior market information were the primary reasons for using a broker. Close to 40 percent of traders cite brokers' access to more contacts as most important in their choice while 25 percent list the broker's access to information as most important in their choice (Table 4). Conversely, when traders feel they know the market or have sufficiently trustworthy partners, they don't use brokers. More than half of interviewed brokers (53 percent) noted that knowing the market well enough justified not using a broker while 26 percent indicated that a broker was unnecessary when they had well-known trading partners.

Brokers generally do not trade on their own account, with less than 10 percent of transactions on their own account (Table 5). While they do not bear market price risk, they are held accountable in the event of a breach of contract. Brokers enumerate their role as guarantors or witnesses of each transaction as important among the services they provide. Through their intermediation, they ensure that *imnet*, or trust, is present in the long-distance transaction.

Location is a key aspect of the role played by brokers. Because brokers are permanently located in the central market, they are easily identifiable to all

traders who come in and out of the market. Thus, they are natural repositories of information, regarding market flows, the behavior of market participants, and the outcomes of past transactions. Their permanent presence in the central market ensures the continuity of a reputation transmission mechanism. In addition, their continuous presence implies that, in the event that a falling out between partners occurs during a long-distance trade, the broker can be contacted to mediate and resolve the dispute.

Despite the lack of formal barriers to becoming a broker, the number of brokers is relatively small. Interviews with brokers revealed that brokers view the *imnet* (trust) they have acquired from their network of traders as a critical asset in their business. Thus 60 percent of brokers had a parent in grain trade, and 40 percent had a parent in grain brokerage (Table 5). Grain brokerage businesses pass from generation to generation, transferring the *imnet* gradually from the father to the son, who acquires the father's clients. The high value placed on the broker's work is similar to the importance of *xinyong*, or trust, in traditional Chinese trading practices in southeast Asia, which is also transferred across generations (Menkoff 1994).⁷

⁷ The existence of trust is the most frequent explanation given by Chinese traders for their success in business. The necessity "to trust trust" is among the safeguards against the possible breach of business commitments (see Menkoff in Dieter-Evers and Schrader, 1994; Fukuyama, 1995, Tadelis, 1997).

6. AGENCY RELATIONS BETWEEN TRADERS AND BROKERS

While brokers enable traders to circumvent the commitment problem with other traders, what prevents brokers from abusing their trust (*imnet*) with their clients?

TRADERS' DEPENDENCE ON BROKERS

Several key features of the relationship between brokers and traders emerge from the data. First, a large proportion of Ethiopian grain traders (85 percent of sample) use brokers regularly. Most traders have long-term working relations with their brokers, with a sample average of 6 years. Interviewed brokers report that 87 percent of their clients were long-term (see Table 6).⁸

The reliance on brokers among regional traders is far greater than that of traders located in the central market, where only 54 percent report regular use of brokerage (Table 7). The level of dependence on brokerage, as measured by whether traders perceived it was possible to carry out long-distance trade without brokers, varied across regions. A greater share of traders in surplus markets, ranging from 26 percent to 70 percent of traders, felt they could not operate in distant markets without a broker while *all* traders in the deficit regions (with the exception of Wollo) and the central market considered it possible to trade without

⁸ Similarly, Fafchamps (1996b) finds an average of 4.1 years of business relations among firms in Ghana.

brokers. In general, regional buyers are more likely to travel the distance to the central market and purchase the grain themselves, while regional sellers are more likely to closely work with a broker, using telephone transactions. This may have to do with the opportunity cost of time faced by regional sellers of grain, who are busy purchasing grain from smaller rural markets, and whose business would suffer if they were obliged to physically travel to the central market for each long-distance sale.

Another aspect of the dependence of traders on brokers was whether traders worked exclusively with a single broker or whether they worked with a number of brokers. Traders in surplus regions, as well as in Wollo, appear to follow the practice of working with a single broker, with 74 percent to 100 percent of traders in these markets following this practice (Table 7). In contrast, a smaller share (20 percent - 40 percent) of traders in the deficit regions and the central market followed this practice. Thus, while the usage of brokers is equally widespread among regional buyers and sellers, long-distance grain sellers appear to be markedly more dependent on brokers than long-distance grain buyers.

ETHNICITY IN TRADER-BROKER RELATIONS

While the proportion of traders with the same ethnic origin as their broker ranged between regions from 8 percent to 54 percent, overall, only 26 percent of traders were from the same region as their brokers. As further confirmation, only 4 percent of traders revealed that they had "kinship" ties with their brokers (Table

7). Interviewed brokers reported that, on average, only 16 percent of distant buyer clients and 18 percent of distant seller clients were from the same region. The absence of ethnicity as a basis of agency relations is a striking departure from other studies of trust-based trading networks, in which ethnicity plays a major role (Fafchamps 1992,1996; Greif 1993; Dieter-Evers 1994).

TRANSPARENCE OF TRADE-BROKER RELATIONS

The absence of a public market information system and the physical distance between regional traders and central market brokers in Ethiopia result in high monitoring costs for traders to monitor brokers' actions. Traders indicate that they are always suspicious of possible cheating by brokers. Traders suspect that brokers occasionally "skim" additional profits off the actual price that they obtain in the market as opposed to the price that they convey to the trader. This is called *ferq* and is a source of conflict between traders and brokers. In all regions, the majority of traders indicated that they regularly cross-check information provided by their broker. The proportion of traders who carry out cross-checks ranges from 65 percent to 100 percent, and was 79 percent of the sample as a whole (Table 8).

The extent to which brokers are open about the trading partner (buyer or seller) with whom their client has exchanged grain is an indication of the transparency of agency relations. Brokers who regularly reveal the identity of the partner or

who introduce the trading parties may be less likely to behave opportunistically. At the same time, traders may use partner disclosure to bypass using the broker in future trading.

Wide discrepancy exists in the share of traders who reported regularly being informed of their partners' identities, ranging from 0 percent in Wollega to 100 percent in Tigray, while overall 64 percent of traders reported being informed (Table 8). With the exception of Wollo, more traders in deficit regions were provided with this information, probably due to the greater number of regional buyers who went themselves to the central market to conduct purchases.

Traders reported knowing their partner, on average, for 68 percent of all transactions. However, this also varied by region, with traders in deficit regions having a larger share of transactions in which they knew their partner. From the brokers' perspective, interviewed brokers estimated that their clients meet their trading partners for 54 percent of the transactions they handle (see Table 6).

Addressing the question whether traders attempt to bypass their brokers when they know who their trading partner is, traders and brokers provided widely divergent responses. Only 21 percent of brokers considered that direct exchange is likely in the event that trading partners meet (Table 6). They stated that direct exchange was unlikely primarily because their clients were unwilling to risk transacting without a witness. In addition, brokers stated that trader would not engage in future direct exchange with a partner found by a broker since this

would compromise their relations and restrict the trader's pool of possible partners to a single partner. This implies that brokers would consider ending the working relationship in the event that a client trader attempted direct exchange, if the broker found out.

In contrast, a large share of traders (76 percent) indicated that they would consider direct exchange with a partner whom they had met through their broker. In the event that they were to engage in direct contact, 65 percent of traders indicated that they were willing to engage in transactions using only telephone contact, without personally meeting the new partner. On the other hand, the large majority, 83 percent, indicated that they would not be willing to extend supplier credit to the new partner. In response to how many repeated exchanges were necessary in order to create a trusting relationship with a previously unknown partner, on average, traders required 9-10 transactions with the same trader in order to establish trust with a partner. The fact that direct exchange may cause conflict with their broker was confirmed by roughly 40 percent of the sample (Table 8).

Thus, it would appear that there is limited transparency in the agency relations between traders and brokers, given that not all traders are ever informed of their trading partners and those that are informed are not informed at all times.

Further, agency relations appear influenced by the implicit threat by brokers that

traders who use this information to bypass the broker will be “punished” by losing their working relations.

CONFLICT IN TRADER-BROKER RELATIONS

In previous sections, two sources of conflict between traders and brokers were noted. Conflict may arise when traders suspect price misinformation by brokers or when traders attempt to bypass their broker and exchange directly with partners whom their broker found in a previous transaction.

Among interviewed traders, roughly one-third (34 percent) had experienced conflict with their broker, with a sample average of 1.5 conflicts in the past marketing year (Table 9). The number of conflicts varied widely between and within regions. Comparing the number of conflicts with brokers to the number of conflicts traders experienced with trading partners, traders experienced less conflict with their brokers than with the sum of partner conflicts, both using a broker and not using a broker.

The majority of traders (65 percent of sample) used informal mediation as a means of resolving conflicts, with the share of traders using this option ranging from 40 percent to 100 percent. With the exception of a single region, Hararghe, no traders employed legal recourse to resolve conflicts with their brokers (Table 9). Thus, agency relations are characterized by relatively little conflict, the

absence of legal recourse, and the prevalence of informal mediation by members of the trading community. The widespread use of informal mediation, rather than legal recourse, is consistent with the existence of generalized social norms that govern economic relations (Platteau, 1994b).

MECHANISMS TO LIMIT CHEATING BY BROKERS

Without institutional constraints limiting the possibility of opportunistic behavior by brokers, trader-broker relations would be characterized by a higher incidence of conflict and would not be self-enforcing. What are the mechanisms for limiting opportunistic behavior on the part of brokers and reducing conflict?

Effective Reputation Mechanism

Agency relations are structured in a manner that provides a means for sanctioning brokers' actions. Field interviews revealed that, not only do a significant share of traders engage in exclusive relations with a single broker, but that it is also quite common that most traders in a given regional market tend to work with the *same* one or two brokers in the central market.⁹ On the surface, this structure may appear to give brokers significant market power vis-à-vis the individual traders in a market. More importantly, this structure offers a safety net for individual traders in that information provided by the broker flows freely among all traders in a given market. This enables a reputation system to work by the implicit threat that a broker who cheats one client is likely to compromise relations with all clients in that market and nearby markets in the region. Evidence that traders actually do carry out sanctions and effectively boycott a broker was found in the course of field interviews.¹⁰

⁹ Thus, brokers in Addis Ababa are each specialized in handling transactions from a particular set of markets in a region. Brokers who handle grain from the same area have their stalls adjacent to each other, enabling the rapid transmission of price and market information.

¹⁰ Many, though not all, traders interviewed in the market town of Nekempte in Wollega region had collectively boycotted a broker located in the central market and had collectively switched to another broker.

Brokers Incentive Compatibility: The Absence of Marketmaking

A second means of limiting opportunistic behavior by brokers lies in the incentive compatibility of brokers relative to their clients. A potential source of conflict in agency relations would exist if brokers, trading on their own account, bought and sold grain from their own clients.¹¹ Field interviews revealed that very few grain brokers buy or sell clients' grain on their account, at least overtly, in the interests of maintaining neutrality vis-à-vis their client traders.¹² Thus, the grain market structure does not have a role for "marketmakers," who openly purchase unmatched orders at a discount (the bid price) and sell unmatched orders at a premium (the ask price), in order to create a market for those willing to pay the price of immediacy (Demsetz 1968).

If a partner is not found for a client, the majority of brokers stated that they would store their clients' grain in their warehouses, either at a charge (71 percent of brokers) or without charge (14 percent), or in another warehouse (7 percent). A small share of brokers (7 percent) indicated that they would buy or sell their clients' grain themselves, although this would be at the market price (see Table

¹¹ A number of commodity exchanges, such as the Chicago Board of Trade, prohibit house trading by brokers, in order to limit "frontrunning," when brokers trade on their own accounts before placing clients' orders of which they have a priori information.

¹² While brokers stated that they do not trade directly with their own clients, many are engaged in grain trade. Thus, brokers may conduct undetected "frontrunning", in which case they would be reluctant to reveal the identity of the matched partner.

7).¹³ Interviewed brokers reiterated that trading on their own accounts was considered a serious breach of the implicit rules governing agency relations. Because information on buy and sell orders, on a given trading day, is incomplete, traders cannot confirm a broker's information that a partner was unavailable. Brokers would only be willing to transact at a rate more favorable than the market, thus causing a strain in their relations with clients. The implication of the absence of marketmaking is that brokers never assume market risk and that markets are relatively less liquid.

For their part, traders reported no sales or purchases directly from brokers, indicating that brokers who do trade with their own clients may be doing so covertly. Traders insisted that brokers never offer them this option, which would be greatly preferred since they gain immediacy and transfer market risk to the broker.

Brokers Incentive Compatibility: Fixed and Flat-Rate Commissions

Ethiopian grain brokers are compensated for their services with a fixed commission that is a flat rate per quantity transacted, rather than a percentage of the final transaction price. This practice is common to all regions studied in

¹³ Matching remaining orders at the market price would not be economically rational behavior for a broker, who would incur market risk in the process. This action would only be justified in the interests of favoring a long-term client.

Ethiopia and confirmed by 93 percent of sampled brokers (see Table 7). Lirenso (1993) also noted this payment system in the Ethiopian grain market in 1992. Field interviews revealed that the flat fee is fixed across brokers and across time, but varies according to regions.¹⁴ Brokers noted that fees were invariant across time because they represented the brokers' fixed operating costs. Brokers attributed regional differences in brokerage fees to "convention," however, they may be linked to the fact that certain regions have higher volume of trading than others. Also, brokerage fees charged to buyers are typically higher than fees to sellers.¹⁵ This may be to the higher level of service provided by buyer's brokers, who not only find a match but who also must ascertain the quality of the grain and inspect the shipment for signs of cheating by the seller.

The practice of fixed brokerage fees has also been noted elsewhere, in rural Indian foodgrain markets by Lele (1971) and in northern Nigerian grain markets by Gilbert (1969). Historical records from the late 19th century indicate that brokerage fees for grain traded on the Chicago Board of Trade were flat fees per quantity and fixed across time.¹⁶ This is also true of other international

¹⁴ Brokers charge different fees for grain coming from different regions. The fee is the same for all brokers handling grain from the same region, and changes in the fee are jointly determined by the brokers.

¹⁵ Sales brokerage fees range from Birr 1.00 to Birr 1.20, while purchase brokerage fees are Birr 2.00.

¹⁶ See the Thirtieth Annual Report of the Trade and Commerce of Chicago, 1887.

commodity markets, such as coffee and cocoa. In these markets, both sellers and buyers pay commission fees, as is the case in the Ethiopian grain market.

In the Ethiopian grain market, a flat brokerage fee is compatible with broker incentives for several reasons. First, brokers do not usually act as dual agents, and represent only one of the trading partners (Table 6). Thus, they receive a commission from only one party in the transaction. In a given transaction, both the seller's agent and the buyer's agent each receive a commission from their clients.

Second, the service for which brokers are compensated is not price search, given that there is a spot price that prevails in the market, but rather the search for buyers or sellers. For this reason, brokers maximize profit across a large volume of transactions in a short period of time, charging a small transaction fee.

Third, and most importantly in the Ethiopian market, a flat commission limits cheating by brokers. Since brokers themselves determine the market price in the price discovery role described above, a percentage fee would bias the price discovery process and provide brokers with incentives to fix the prices to their advantage.

7. CONCLUSIONS

Enhanced food security and the expansion of the Ethiopian market economy require the frequent and ready transfer of grain from surplus regions to deficit regions. The effective functioning of the grain market depends on the ability of traders to exchange grain anonymously with buyers and sellers in distant markets, without risk of commitment failure. This paper studied in depth the types of commitment problems that arise in a market with few formal institutions to deter opportunistic behavior. Weak public market information, the lack of grain standardization, the oral nature of contracts, and limited legal enforcement of contracts are all factors that contribute to the difficulty that traders encounter in attempting to trade directly with an unknown partner. In order to circumvent this commitment problem, traders face two alternatives: either to trade in a personalized fashion with partners whom they know well and with whom they have a trust-based relationship or to trade with an anonymous partner through the intermediation of a broker.

Brokers have multiple functions in the grain market. They are primarily engaged in matching buyers and sellers in what would otherwise be a time-consuming search process as well as in setting daily spot prices. Because they have the

trust of their clients, brokers act as inspectors and witnesses to each transaction and guarantee that the contract will be enforced. This latter role supports impersonalized exchange in the Ethiopian grain market.

Brokerage use varies by type of market and type of transaction. Traders in surplus regions use brokerage more for sales while traders in deficit regions use brokerage more for purchases. Traders in the central market use brokers considerably less.

Traders' dependence on brokerage varies across regions, with more traders in surplus regions indicating regular use of brokerage. Similarly, traders in surplus regions tend to work exclusively with a single broker. Relations between traders and brokers are generally long-term, with repeated interaction. Somewhat surprisingly, ethnicity does not seem to be a motivating factor in the relations between traders and brokers.

Despite repeated interaction and loyalty in trader-broker relations, the difficulty of monitoring brokers' actions presents moral hazard problems for traders. Brokers do not regularly provide their clients, particularly in surplus regions, with information on the identity of the trader with whom they have exchanged grain. Although agency relations are not fully transparent, there are relatively few instances of conflict between traders and brokers. Conflict is avoided through

established conventions that limit brokers' opportunistic behavior and that are incentive-compatible for brokers. These conventions are that brokers tend to be specialized in a certain region and thus handle a large number of clients from one market town. This enables traders to exchange information regarding the broker amongst themselves and maintain a viable reputation mechanism that is based on collective sanctions of wrongdoing by the broker. Second, brokers' incentive compatibility is maintained by the norm that brokers generally never buy or sell on their own account and are remunerated with flat brokerage fees.

Agency relations between brokers and traders are characterized by a system based on reputation, rather than trust. In contrast to studies of networks or trader coalitions that are linked through a common ethnic or religious base and that function on the basis of trust, the structure of Ethiopian brokerage is self-enforcing through the use of reputation and incentive-compatibility constraints on brokers' operations.

Table 1--Activities of Brokers

	Mean (Standard Deviation)
Number of Markets That Broker Contacts	5.80 (2.70)
Total Number of Clients	60.50 (32.27)
Number of Local Buyer Clients	11.20 (15.77)
Number of Distant Buyer Clients	7.44 (5.75)
Number of Local Seller Clients	2.10 (5.38)
Number of Distant Seller Clients	38.44 (17.18)
Total Buyer Clients	13.30 (15.36)
Total Seller Clients	46.62 (18.76)
Share of Distant Buyer Clients With Whom Can Work Solely by Telephone	19.63 (37.21)
Share of Distant Seller Clients With Whom Can Work Solely by Telephone	76.77 (35.83)
Share of Buyer Clients To Whom Broker Would Offer Buyer Credit	32.22 (34.58)
Share of Seller Clients To Whom Broker Would Offer Sales Advance	41.15 (43.62)
Storage Capacity (quintals ^a)	928.93 (758.02)
Quantity Currently of Own Stock	446.25 (853.49)
Quantity Currently of Rental to Clients	198.75 (231.40)
Total Number of Employees	14.85 (10.33)
Full-time salaried	.85 (1.34)
Full-time non-salaried	2.54 (1.45)
Daily wage workers	10.93 (9.20)
Average Weekly Transactions (quintals)	
January 1996	2777.27 (2106.11)
February 1996	2788.64 (2302.75)
March 1996	2543.18 (2089.32)
April 1996	1411.36 (1394.96)
May 1996	1752.27 (1856.56)
June 1996	1956.82 (1671.23)

Source: Author's survey, 1996

^a A quintal is equivalent to a 100 kg. sack.

Table 2--Price Discovery Role of Brokers

	Share of Sample
Existence of Single Daily Market Price	78.6
Frequency of Price Changes	
Daily	21.4
2 - 3 times per day	64.3
	Mean (Standard Deviation)
Time Required to Set Market Prices (Minutes)	18.77 (11.25)
Number of Prices Set Daily	7.30 (3.47)
Time Required to Set Each Price	6.20 (4.80)

Source: Author's survey, 1996

Table 3--Contractual Choices of All Traders
 (% shares of total transacted quantities)^a

	PURCHASES	SALES
	Total Share (N=152)	Total Share (N=152)
1. Local Agent	0.34 (4.06)	0.65 (4.87)
2. Distant Agent	6.18 (14.24)	0.79 (5.18)
3. Local Self-Search	45.02 (34.92)	62.11 (32.80)
4. Distant Self-Search	21.29 (23.20)	10.04 (16.90)
5. Local Broker	11.03 (17.20)	7.25 (12.96)
6. Distant Broker	15.81 (26.01)	18.79 (26.46)

Source: Author's survey, 1996

^a Standard deviations are reported in parentheses.

Table 4--Rationale for Choice of Broker's Services

Reasons to Work with Broker:	Count Percentage	Reasons Not to Work with Broker:	Count Percentage
Broker has better access to market information	28 24.8%	I trade with partners whom I know closely	28 25.9%
Broker acts as guarantor	11 9.7%	I know the market well enough	57 52.8%
Broker has more contacts	44 38.9%	Brokers cheat on prices	7 6.5%
Broker identifies good quality	9 8.0%	I want to save commission fees	10 9.3%
I have no choice	12 10.6%	I don't need a quick transaction	5 4.6%
Broker gives business advice	2 1.8%	Disagreement with broker	1 0.9%
Less costly to work with broker	7 6.2%		
Total	113 100%		108 100%

Source: Author's trader surveys, 1996

Table 5--Profile of Brokers and Traders

Characteristics	Brokers: Mean (Standard Dev.)	Traders: Mean (Standard Dev.)
Age	36.21 (11.49)	32.83 (12.32)
Years of Operation as Broker	8.77 (7.63)	10.41 (8.76)
Years of Schooling	8.29 (4.41)	9.61 (3.64)
Working capital	79,750 (100,805)	55,184 (62,647)
Share of Transactions on Own Account	9.1 (11.66)	
Characteristics	% of Brokers	% of Traders
Mother tongue		
Oromigna	14.3	17.8
Amharigna	64.3	69.1
Tigrigna	14.3	8.6
Guraguigna	7.1	4.6
Religion		
Muslim	21.4	32.2
Christian Orthodox	78.6	66.4
Father's Occupation		
Farmer	40.0	39.1
Grain trade	60.0	48.4
Father in Grain Brokerage	40.0	
Own Transport Vehicle	28.6	5.9
Own Telephone	71.4	38.8
Specialization of Business		
Primary Work as Broker	100	
Only Brokerage	42.9	
Brokerage and Wholesale	35.7	
Brokerage, Wholesale, Retail	21.4	
Ranking of Services Offered		
Search for Partner	1	
Provide Market Information	2	
Act as Guarantor of Transaction	3	
Provide Credit	4	

Source: Author's survey, 1996

Table 6 -- Broker Relations with Trader Clients

	<i>% of Respondents</i>
Basis of Broker-Trader Relations	
referral	50.0
common region	42.9
anonymous meeting	7.1
Flat fee payment	92.9
When no partner is found for client:	
Broker charges client for storage	71.4
Broker rents outside space for client	7.1
Broker buys/sells grain at market price	7.1
Broker stores grain without charge	14.3
If partners meet, future direct exchange is likely	21.4
	<i>Mean (standard deviation)</i>
Share of Long-Term Clients	87.43 (13.85)
Share of Distant Buyer Clients from Same Region	16.00 (35.02)
Share of Distant Seller Clients from Same Region	17.89 (34.79)
Type of Agency ^a	
Represent both buyer and seller	7.36 (26.68)
Represent buyer only	16.21 (28.49)
Represent seller only	76.43 (35.60)
Broker's Actions ^a :	
Immediate Matching of Partners	77.53 (11.12)
No Match - Rent Storage to Client	17.00 (10.68)
No Match - Buy or Sell on Own Account	6.68 (11.06)
Transparence during match ^a	
Only buyer present	37.36 (23.59)
Only seller present	3.73 (13.45)
Both buyer and seller present	53.68 (26.37)
Neither buyer nor seller present	.77 (1.88)

Source: Author's survey, 1996

^a Represents shares of brokers' transactions over recall period.

Table 7--Traders' Relations with Brokers

Region	Uses Brokerage Regularly (%)	Could not operate without broker (%)	Works exclusively with single broker (%)	Years of exclusive relations with broker (mean, std. dev.)	From same region as broker (%)	Kinship ties with broker (%)
Surplus Markets						
Wollega	100.0	70.0	92.3	4.11 (3.96)	66.7	0.0
Arsi	100.0	44.4	100.0	13.75 (11.76)	8.3	0.0
Gojjam	92.3	26.3	74.4	4.11 (2.87)	9.7	2.7
Deficit Markets						
Wollo	89.5	42.9	78.9	4.96 (5.48)	46.2	17.6
Tigray	100.0	0.0	42.9	2.50 (2.18)	30.8	0.0
Harar	100.0	0.0	44.4	3.57 (3.15)	54.5	0.0
Central Market						
Addis Ababa	54.1	0.0	21.6	3.87 (3.12)	25.0	5.6
Total	85.5	33.8	59.2	5.60 (6.55)	26.4	3.9

Source: Author's survey, 1996

Table 8-- Transparency in Trader-Broker Relations

	Trader cross-checks broker information (% of traders)	Broker reveals identity of partner (% of traders)	Trader knows partner (% of transactions mean, std. dev.)	Trader considers direct exchange (% of traders)	Direct exchange creates conflict (% of traders)
Region					
Surplus Markets					
Wollega	76.9	0.0	44.09 (44.32)	63.6	57.1
Arsi	66.7	33.3	60.91 (37.74)	54.5	50.0
Gojjam	86.5	65.5	73.67 (33.50)	100.0	16.7
Deficit Markets					
Wollo	64.7	41.7	41.07 (47.64)	28.6	25.0
Tigray	100.0	100.0	94.58 (14.37)	91.7	27.3
Harar	81.3	81.3	90.88 (20.02)	94.1	75.0
Central Market					
Addis Ababa	64.7	66.7	58.21 (30.10)	66.7	50.0
Total	78.6	63.7	68.21 (37.65)	76.4	39.3

Source: Author's survey, 1996.

Table 9 -- Conflict in Trader-Broker Relations

Region	Trader had conflict with broker (% of traders)	Number of conflicts with broker¹ (mean,s.d.)	Conflict resolved through mediation (% of traders)	Conflict resolved through legal recourse (% of traders)	No. of conflicts with partner resolved by broker¹ (mean, s.d.)	No. of conflicts with partner without use of broker¹ (mean, s.d.)
Surplus Markets						
Wollega	38.5	3.55 (6.30)	100.0	0.0	1.55 (2.46)	1.55 (3.01)
Arsi	41.7	.73 (1.56)	60.0	0.0	0.0 (0.0)	.73 (1.42)
Gojjam	29.7	1.50 (1.98)	50.0	0.0	1.40 (2.58)	.27 (.69)
Deficit Markets						
Wollo	17.6	.57 (.94)	66.7	0.0	1.09 (1.76)	1.50 (2.02)
Tigray	25.0	.75 (1.06)	66.7	0.0	2.83 (5.17)	1.36 (3.04)
Harar	50.0	1.25 (1.69)	40.0	20.0	.53 (1.23)	.65 (1.46)
Central Market						
Addis Ababa	42.1	2.07 (2.99)	100.0	0.0	.87 (1.60)	4.73 (5.11)
Total	34.1	1.47 (2.73)	65.2	4.3	1.20 (2.58)	1.38 (2.88)

Source: Author's survey, 1996.

¹ Over a recall period of 1 marketing year.

Figure 1--Production Zones and Road Network in Ethiopia

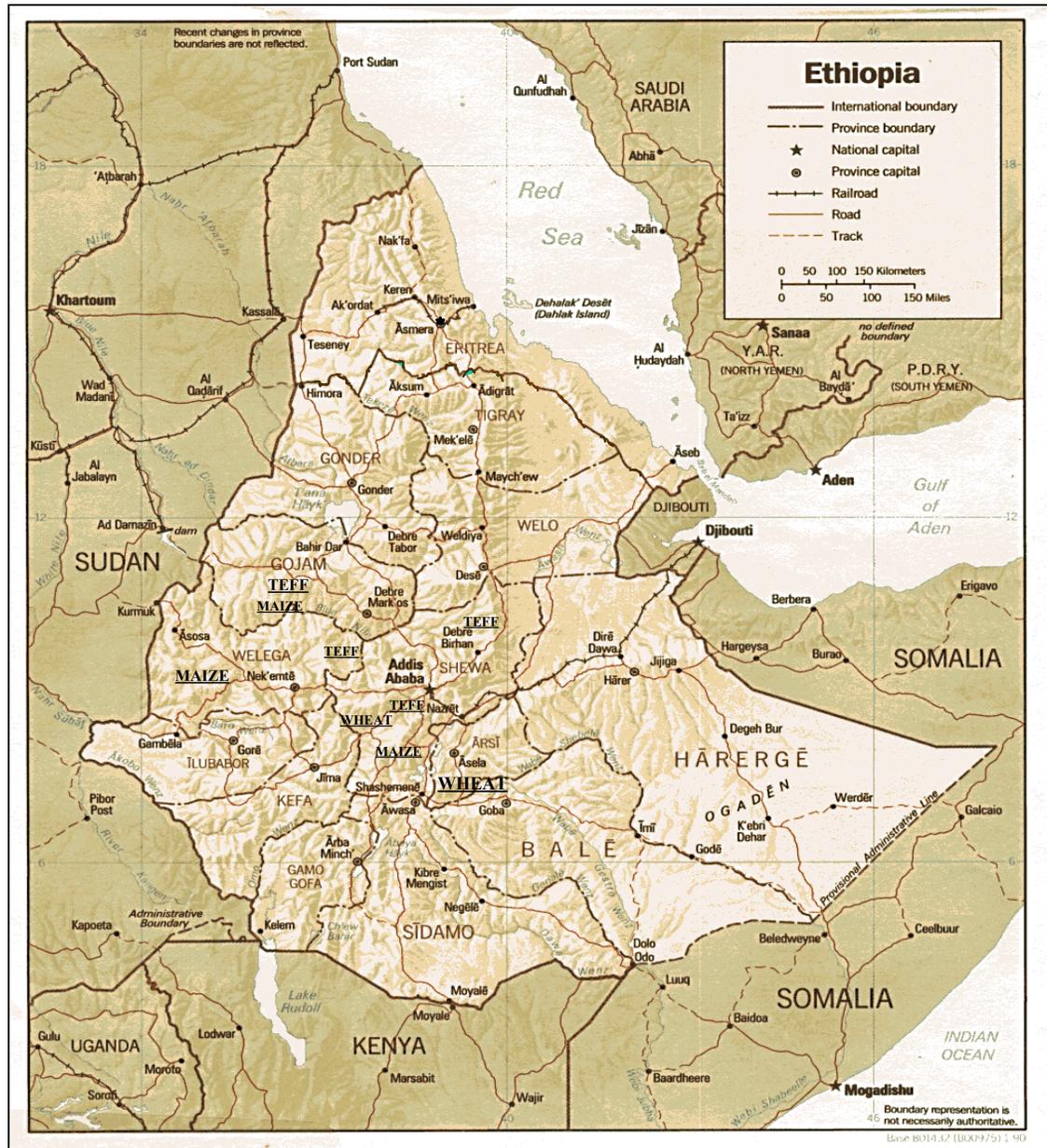
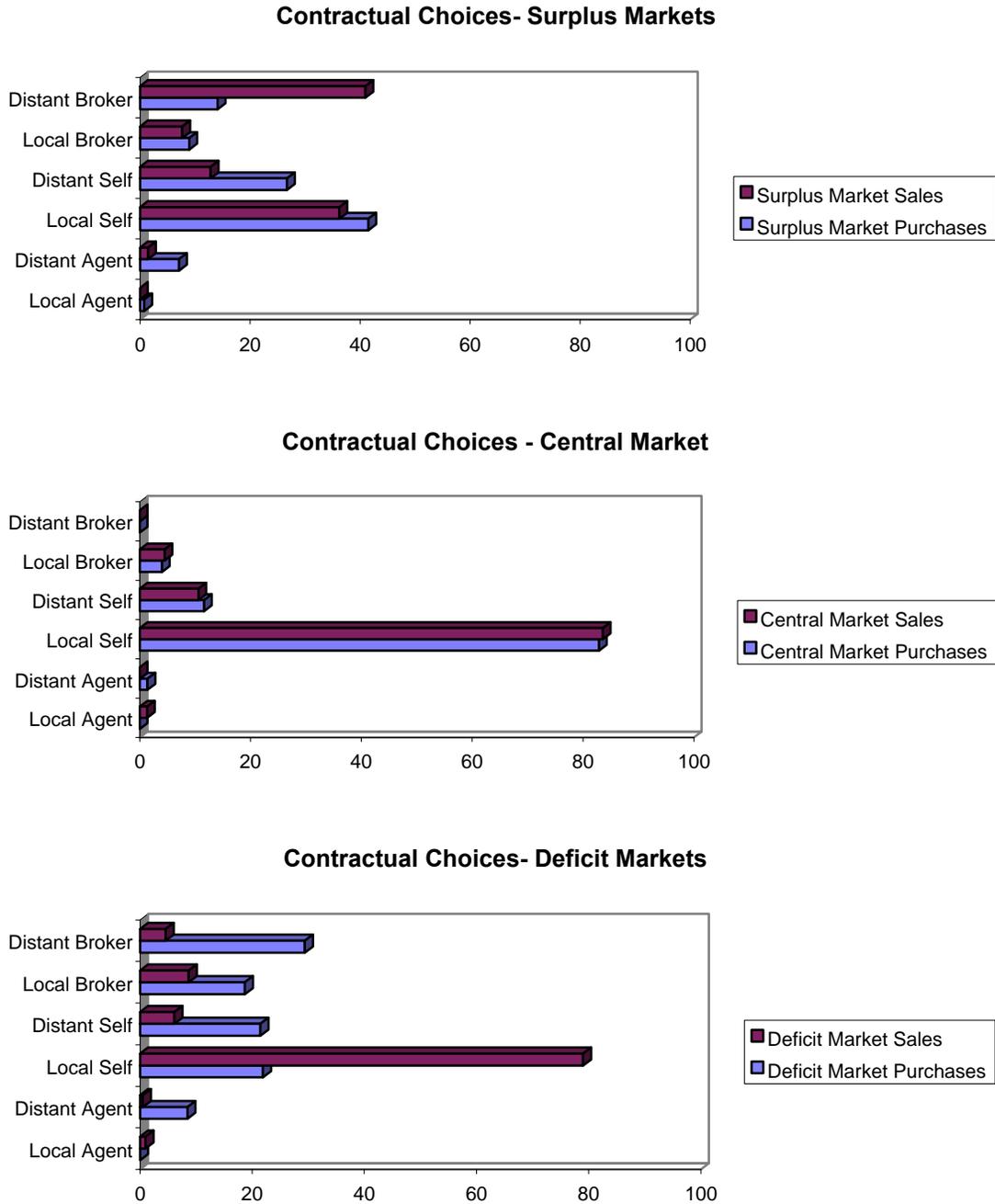


Figure 2--Contractual Choices by Type of Market and Type of Transaction



Source: Author's survey, 1996.

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