



MALAWI

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COMMODITY EXCHANGES AND WAREHOUSE RECEIPTS IN MALAWI

**Current status and their implications for the development of
structured markets**

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ABSTRACT

This study examines the landscape in which Malawi's two agricultural commodity exchanges (Comex) and warehouse receipts systems (WRS) operate and makes recommendations on how to improve their performance and benefits to key stakeholders. A mixed methods approach was adopted, involving semi-structured interviews with key market participants, compilation and analysis of secondary data from Malawi and other African Comex, and a review of existing literature. A review of international experience indicates that historically Comex often develop hand-in-hand with warehouse receipt systems (WRS), which help stimulate demand from off takers for standardized contracts while providing financing that increased volumes traded. In recent years, electronic trading platforms have given an impetus to the consolidation of existing Comex, and the development of regional networks of exchanges and warehousing arrangements. Nonetheless, a common reason why Comex fail is that they do not attract sufficient trading volumes to pay for their operating costs. This is often associated with default on contracts and fears of the market for commodities being cornered by a few larger traders. Of the 23 Comex in Africa, over half are still in their planning or inception stages and, with the notable exception of the agricultural futures and options traded on the Johannesburg Stock Exchange, most of the remaining Comex are thinly traded and receive financial support from government and/or donors.

Malawi is one of only two countries in Africa to have two Comex, along with two WRS plus a parallel system of direct collateral financing by the commercial banks. Volumes traded on the two Comex, the Agricultural Commodity Exchange (ACE) and Auction Holding Commodity Exchange (AHCX) rose rapidly from under 50,000 metric tons (MT) in 2013 to almost 115,000 MT in 2016, but then collapsed to less than 20,000 MT in 2017. Processors and large national trading companies account for most of the volume traded on Malawi's Comex, with periodic but sizeable interventions by the national food agencies. However, these volumes form a relatively small proportion of total throughput and turnover for processors and large traders, who view the Comex and WRS as useful supplements to their main channels of procurement and financing. A recent nationally represented survey identified no farmers who had traded directly on the Comex, while a trader survey and semi-structured interviews found only a small number of farmers associations/cooperatives and small traders who had done so. Some farmers associations had unfavorable experiences with Comex mediated WRS loans, especially for pigeon peas, in the last few years.

Overall, farmers associations, traders, processors, and the financial institutions do see potential value to the Comex and WRS but feel that it has not yet been fully demonstrated. Farmers associations and small traders are deterred from using them by delays in sales, high charges, and a desire to avoid paying withholding tax. Processors, feed manufacturers, and large traders are discouraged by the relatively limited volumes available for purchase on the Comex, frequent defaults on spot contracts, and the cost of employing collateral managers for WR backed financing. The financial institutions also view the WRS as having potential but regard WR backed loans as a risky activity that until recently had little legal enforceability. The passage of the Warehouse Receipt Act in late 2017, and the Commodity Exchange Directive, which will come into force in April 2019, may encourage them to use the Comex and WRS more over the coming years.

A series of short and medium-term recommendations, some of which are generally accepted but three of which are more controversial, are advanced to improve the function of the Comex and WRS in Malawi. For the Comex, the short-term recommendations include harmonizing ACE and AHCX's grading systems, enforcing the regulations against own-account trading in the Commodity Exchange Directive, and promoting collateral management as an alternative income stream to commissions and fees. Farmers and small traders might also be encouraged to use WR for storage alone, without linking them so closely to collateral financing. The financial institutions would benefit from establishing clear limits and strike prices for the WR-backed loans. In the medium-term, ACE and AHCX operations should be carefully examined to promote synergies and reduce overlap, especially in the areas of clearing and the issuing/recording of WRs. To promote transparency, a single unified WRS should be established that is independent of both exchanges. The nascent trade in regional futures contracts on the Zambia Agricultural Commodity Exchange is promising and should be monitored closely as it may encourage the use of hedging and other commodity trading strategies in Malawi. More controversially, many would argue that ACE and AHCX should merge into a single exchange with an independent, representative body established to exercise oversight of that exchange (in addition to financial regulation by the Reserve Bank of Malawi). To encourage greater use of

both electronic payments and a unified exchange, all food commodity transactions might be exempted from withholding tax.

Keywords: Malawi, commodity exchange, warehouse receipts systems, structured markets

ABBREVIATIONS AND ACRONYMS

ACE	Agricultural Commodity Exchange for Africa (Malawi)
ADMARC	Agricultural Development Marketing Corporation (Malawi)
AFEX	Africa Exchange Holdings (Nigeria)
AgDiv	Agriculture Diversification Activity
AHCX	Auction Holdings Commodity Exchange (Malawi)
BVO	Bid-Value Only
CBOT	Chicago Board of Trade (USA)
CME	Chicago Mercantile Exchange (USA)
Comex	Commodity Exchange(s)
DCAFS	Donor Committee on Agriculture and Food Security
DFID	Department for International Development (United Kingdom)
EAX	East African Exchange (Rwanda)
EBRD	European Bank for Reconstruction and Development
ECA	European and Central Asia
ECX	Ethiopian Commodity Exchange
ESC	Electronic Silo Certificate
EUREX	European Exchange
FDH	Financial Holdings Limited
JSE	Johannesburg Stock Exchange (South Africa)
MATIF	Marché- à Terme International de France
MCX	Multi Commodity Exchange (India)
MFG	Minimum Farmgate Price
MOST	Malawi Oilseed Sector Transformation
MWK	Malawian Kwacha
MT	Metric Ton
NCDEX	National Commodity and Derivates Exchange
NMCE	National Multi Commodity Exchange (India)
NYMEX	New York Mercantile Exchange (USA)
RBM	Reserve Bank of Malawi
SAFEX	South African Futures Exchange
SC	Silo Certificates
SGR	Strategic Grain Reserve
TWLB	Tanzania Warehouse Licensing Board
UNCTAD	United Nations Commission of Trade and Development
USAID	United States Agency for International Development

WR	Warehouse Receipt
WRS	Warehouse Receipt System
WFP	World Food Programme
ZIMACE	Zimbabwe Commodity Exchange
ZAMACE	Zambian Commodity Exchange

GLOSSARY OF KEY TERMS

Auction: A process where potential buyers place competitive bids on assets or services

Basis: The difference between the spot price and the futures price of a commodity

Commodity Exchange: A legal entity that determines and enforces rules and procedures for the trading standardized commodity contracts and related investment products.

Derivative: A financial instrument such as a futures or options contract, whose value is based upon a physical commodity (or on other financial instruments)

Collateral Manager: A company that ensures the integrity of warehouses and the quality of commodities held therein.

Forward contract: A private, cash-market agreement between a buyer and seller for the future delivery of a commodity at an agreed price. Unlike futures contracts, forward contracts are not standardized and not transferable.

Future contract: A standardized contract for the purchase and sale of physical commodities (or financial instruments) for future delivery on a regulated commodity futures exchange.

Haircut: The difference between the market value of an asset used as collateral for a loan and the value ascribed to that asset. The amount of the haircut reflects the perceived risk of the asset falling in value or being sold immediately.

Hedging: Taking a position in a futures market opposite to a position held in the cash market to minimize the risk of financial loss from an adverse price change

Marking-to-market: To debit or credit on a daily basis an account based on values the close of that day's trading session.

Margin call: A margin call (or variation margin) occurs when the value of an account or asset, such as the crops deposited as collateral for a loan, below a required minimum value. The owner/investor is then required to 'top-up' the account or deposit.

Options contract: A standardized contract that gives the bearer the right, but not the obligation, to buy or sell a futures contract at a specified price within a specified time period.

Spot market: A market for physical commodities are bought and sold for cash and delivered immediately (or almost immediately)

Warehouse receipt: A document which guarantees the quantity and quality of a commodity stored within an approved facility

Warehouse Receipt System: A centralized system (usually electronic) for recording warehouse receipts issued by a group of certified or registered warehouses

Source: <https://institute.cmegroup.com/support/glossary> and www.investopedia.com

1 INTRODUCTION AND SCOPE OF WORK

Malawi is unusual in having not one, but two commodity exchanges: The Agricultural Commodity Exchange (ACE), established in 2006, and Auction Holdings Commodity Exchange (AHCX) Ltd, established in 2013. Furthermore, several parallel 'systems' exist that advance collateral financing using warehouse receipts.

This study, which has been funded by the United Kingdom Department for International Development (DFID) and the United States Agency for International Development (USAID) aims to:

- A. Describe and analyze the landscape in which Malawi's two agricultural commodity exchanges and warehouse receipts 'systems' operate;
- B. Make recommendations on how best to maximize the performance and benefits of the commodity exchanges and warehouse receipts to key stakeholders, and how these can contribute to the development of structured markets in Malawi.

2 METHODOLOGY

The study adopted a mixed methods approach, involving semi-structured interviews with key market participants, compilation and analysis of secondary data (where available) from Malawi and other African Commodity Exchanges (Comex), and a review of existing literature.

The most important elements of the research were semi-structured interviews with 45 key market participants and other stakeholders undertaken in May/June 2018. The respondents included:

- ACE and AHCX
- Farmers associations and groups in 11 districts
- Small and medium scale traders in 11 districts
- Processors and feed manufacturers (through their headquarters in Blantyre and Lilongwe)
- Large national traders and National Food Agencies (again, through their headquarters in Blantyre and Lilongwe)
- Financial institutions
- Government, Development Partners, and Civil Society Organizations

The study also compiled and analyzed secondary data from Malawi's two commodity exchanges, along with data from other African Comex. In addition, a question on traders' use of the Comex was added to an IFPRI structure-conduct-performance study of maize marketing covering 555 traders in 11 districts in June/July 2018. A nationally representative panel survey of 3,001 farmers conducted for IFPRI by Wadonda Consult in July/August 2016 and August/September 2018, as part of a study into the pluralistic agricultural extension system in Malawi, was also analyzed to assess the extent to which farmers sell their crops via the Comex.

The authors would like to express their sincere appreciation to all the market participants and other actors who kindly consented to be interviewed for the study, provided data or literature relevant to the study.

3 REVIEW OF INTERNATIONAL EXPERIENCES¹

While the origins of commodity trading and collateral financing via warehouse receipts go back to Ancient Mesopotamia, the origins of modern commodity futures markets and warehouse receipts lie in the development of commodity markets in North America in the mid-19th Century followed by Latin America (Williams, 1986; UNCTAD, 2009). Comex and WRS in other regions, particularly, China, Eastern Europe and the former Soviet Union, and India followed much later after the liberalization of their planned economies.

¹ This sub-section draws on FAO (2011), Peck (2002), UNCTAD (2009) and Williams (2001) plus the website of the Commodity Futures Trading Commission.

North America

In North America the opening-up of the Mid-West — in particular, the clearing and planting of the prairies, development of steam navigation, the railways, and the telegraph stimulated substantial flows of grain from this region to the East Coast and to Europe. The city of Chicago, which between 1830 and 1900 changed from a fur trading village to an urban metropolis, was at the centre of development. Entrepreneurs and farmers in both the American and Canadian mid-West, built steam-powered grain elevators to receive and store grain in bulk, prior to sale and onward shipment, and began to issue tradable warehouse receipts against the stock. Established in 1848, the Chicago Board of Trade (CBOT) emerged as the main spot trading floor for agricultural commodities, primarily corn (yellow maize) and wheat. The CBOT quickly established grading systems to reward better grain quality. Futures trading then started as a way to assure East Coast grain buyers prices in advance of the actual shipment of physical grain from the mid-West, and soon emerged as the dominant activity of the CBOT. This attracted financiers and market makers ('speculators') who provided greater liquidity to the exchange. However, the CBOT was periodically the object of speculative manipulation and corners (UNCTAD, 2009). In the last decade of the 19th and first decade of the 20th Century, the CBOT therefore developed its own clearing committee, which was a counterpart to all contracts, to avoid the charge that its contract positions were wagers. This clearing committee served as a clearing house which promoted the offsetting and fungibility of futures contracts (Williams, 2001).

As the usefulness of the futures trading became established, commodity exchanges sprung up in other parts of the US and Canada. Of particular note was the Chicago Butter and Egg Board, which was established in 1898 and became the Chicago Mercantile Exchange (CME), with its own clearing house, in 1919.² The whole trading system, covering agricultural warehousing, grades and standards, and commodity exchanges was brought under federal regulation during the second decade of the 20th century, with the passing of the US Warehousing Act of 1916 and related state acts. Regulation required elevators to be licensed by federal or state authorities. There are consequently thousands of locations where farmers may deposit agricultural commodities in return for a negotiable warehouse receipt, which can be used either to raise collateral financing or as a tradeable document.

Until the mid-1990s, there were around a dozen Comex trading futures and options for agricultural commodities ('softs') in North America. During the late 1980s and early 1990s, a trade in financial futures, options and related derivatives emerged and flourished during the dot com bubble at the turn of the 21st century. However, with the introduction of electronic trading platforms and the World Financial Crisis of 2007-2008, a wave of consolidations occurred.³ Among these was the takeover of the Chicago Board of Trade and New York Mercantile Exchange by the Chicago Mercantile Exchange, which had previously mainly traded financial futures and options. The CME Group is the now world's largest and most diversified commodity futures exchange and presides over 90 percent of all United States future contract trades and transactions.

Latin America

The development of Comex and the Warehouse Receipt System (WRS) in Latin America, followed a somewhat similar pattern to that in North America, with the opening-up of the pampas in Argentina to grain and soybeans, and the establishment of coffee and cocoa as major export crops in Brazil and Colombia. The oldest commodity exchange in Latin America, the Bolsa de Cereales in Argentina, dates back to 1854, just six years after the founding of the CBOT. The development of refrigerated beef shipping in 1876 gave a boost to the ranching (cattle) sector, which in turn stimulated the development of maize and soybean production for feeding. By the 1920s, Argentina's agricultural exports had exceeded US\$1 billion, making it one of the ten richest countries in the world (Maddison, 2000).

There are a couple of features of the Latin American experience that are distinct from the North American one and deserve highlighting. First, in both Argentina and Brazil, a network of auction floors and regional commodity exchanges developed, which facilitated the aggregation and negotiation of forward deliveries.

² Although other US commodity exchanges were established in inter alia, Kansas City, Minneapolis, New York, San Francisco, and St Louis in the decades that followed, Chicago remained the most influential location for the trading of agricultural commodity futures in the USA (Chatnani, 2001; Williams, 2001).

³ Canada's Winnipeg Commodity Exchange, which was founded in 1908, was the first Comex in North America to move from an open outcry system to electronic trading in 2004.

Argentina's National Exchange Network now spans 11 exchanges and a clearing house (trading barley, cotton, flax seed, maize, soybeans, vegetable oils, and wheat) while Brazil's Bolsa network includes eight exchanges (trading beans, coffee, cotton, maize, soybeans, wheat, live cattle, pigs and wine).⁴ These networks of trading exchanges further developed with the introduction of electronic trading in the 2000s, and offer a potential model of cooperation for Africa's rapidly expanding Comex sector (see next section).

Second, Latin American countries generally adopted the approach of passing General Warehousing Acts regulated by Ministries of Trade or banking authorities. The Acts provided for the licensing of 'General Warehousing Companies' (Almacenes Generales de Depósito or Armazens Gerais) which stored all sort of commodities (agricultural and non-agricultural) and issued depositors with warehouse receipts, in two parts, one a title or ownership and the other a pledge certificate, which the depositors could use to raise financing (UNCTAD, 2009). Due to government involvement and subsidization, these General Warehousing Companies have remained important players in the storage sectors in Latin America, which has in turn both competed with and facilitated the development of private sector warehousing operations.

Europe and the Former Soviet Union

While Europe's agricultural Comex can arguably be traced back to the trading of bulbs in Amsterdam in the 17th century, the growth of futures markets in Western Europe did not really take off until after the second World War. Due to widespread government intervention in the agricultural sector futures markets were driven first by metals and then financial futures and options rather than agricultural commodities (known as 'softs'). The London Metals Exchange founded in 1877, and Borsa Diamanti d'Italia established in 1926 are the oldest commodity exchanges still in existence. Most of the exchanges that traded softs such as the London Commodities Exchange and Marché à Terme International de France (MATIF) have long since merged with larger exchanges trading financial futures and options. Examples are Eurex (which itself resulted from the merger of the German DTB Deutsche Terminbörse and the Swiss Exchange Soffex in the autumn of 1998), and Euronext (formed from a tripartite merger of the Amsterdam Exchanges, Brussels Exchanges and Paris Bourse in 2000, and part of the New York Stock Exchange Group since 2007). With the exception of the London Metals Exchange, all European exchanges have moved to an electronic trading basis.

Until the dissolution of the USSR, there was very little commodity trading in the Soviet bloc, which encompassed Eastern Europe, Central Asia, and modern-day Russia. This rapidly changed with the fall of the Berlin Wall in 1989, and the disintegration of the Soviet Union into Russia and 15 independent states. Russia registered its first commodity exchange in May 1990. By mid-1992 some 278 Comex existed, although many were little more than auction floors selling 'anything and everything' (Peck, 2002). In Poland, no less than 200 exchanges were registered during the 1990s. By 2010, after a wave of bankruptcies and mergers, two thirds of the European and Central Asian (ECA) countries had at least one commodity exchange, with 12 operational exchanges in Russia and Poland having no less than 20 exchanges (FAO, 2011). However, most of these exchanges only provide auction platforms and do not provide financing and risk management services, and only a few focus on agricultural commodities (FAO, 2011). Of the exchanges offering agricultural contracts, those in Hungary, Romania, the Russian Federation and Turkey are well developed, and can be compared with exchanges in Europe and the United States. But while these exchanges employ electronic trading technologies and offer a sophisticated range of instruments (including futures contracts) but their trading volumes and turnover for agricultural contracts tends to be low. In 2011, the total annual trading volume of all commodity contracts in the ECA countries together was estimated to be around US\$10 billion. This is equivalent to the amount traded in just three or four days on the commodity exchanges in China or India (FAO, 2011).

Since the end of the 1980s, various approaches have been used to collateralize stock for lending purposes in Eastern Europe and the former Soviet Union (UNCTAD, 2009). These include bank surveillance using Soviet era documentation, employment of collateral managers, field warehousing and regulated systems. There has been considerable outside support for the development of WRS from the Common Fund for Commodities, European Bank for Reconstruction and Development (EBRD), USAID, and others, much of it

⁴ The largest and most important Comex in Latin America is Brazil's *Bolsa de Mercadorias & Futuros* (BM&F), which trades US dollar denominated futures in coffee (arabica and robusta), feeder and live cattle, maize, soybeans and sugar along with options for arabica coffee, corn, live cattle and soybeans. Gold futures and options are also traded. BM&F was founded in 1991 by a merger of the São Paulo Commodities Exchange and the Brazilian Mercantile & Futures Exchange (BM&F), with a subsequent merger joining BM&F with the Rio de Janeiro-based Brazilian Futures Exchange in 1997.

to establish licensing regimes along North American lines. A FAO report (Höllinger et al., 2009) shows that among the 12 Eastern European countries that have sought to develop WRS, the system is most developed in Hungary, Bulgaria and Kazakhstan. All these countries have special Warehouse Receipt (WR) laws for grains rather than broad legislation encompassing various commodities and different commercial practices. The Hungarian system consists of three very large and well capitalized warehousing companies carrying out a lot of field warehousing with similarities to the WRS in Latin America. The Bulgarian and Kazakhstan systems are closer to North American practice with well-structured and efficient government regulatory agencies and indemnity funds (UNCTAD, 2009).

Asia

As in Eastern Europe and the Former Soviet Union, there was a sudden spurt in the development of commodity exchanges following the liberalization of agricultural markets in both China and India in the 1990s and 2000s, respectively.

Following the liberalization of the Chinese economy during leadership of Deng Xiao Ping, commodity exchanges began developing from 1990. By 1993, there were 33 exchanges trading agricultural commodities, mineral and other physical futures contracts (Peck 2002). As elsewhere in the world and despite the massive size of the Chinese market, such a proliferation of exchange was not financially sustainable. The Chinese government curbed speculation and eliminated duplication of contracts by reducing the number of commodity futures exchanges to 14 in 1995 and then to three in 1998 (Peck, 2002). Since then, these three large Comex (the Dalian Commodity Exchange, the Shanghai Metal Exchange, and the Zhengzhou Commodity Exchange) have continued to operate profitably attracting large trading volumes. Of these exchanges, two trade agricultural commodities: the Dalian exchange, which was established in 1993, specializes in soybeans, soybean oil, and palm oil, and the Zhengzhou Commodity Exchange, founded in 1990, which focuses on wheat, cotton, and rapeseed.

Although it already had well-developed system of collateral financing using WR, India's Comex development did not start until a decade later than in China. Futures trading of most commodities, including gold and silver, was banned in India during the second half of the 19th Century. However, the Government of India allowed the re-introduction of commodity futures in 2002 (Chatnani, 2010). With the approval of the Forward Markets Commission, three screen-based, nation-wide multi-commodity exchanges were then quickly set-up: the National Commodity & Derivatives Exchange (NCDEX), which trades in agricultural commodities (in particular castor seed, guar, maize, soybeans, refined soy oil, wheat, and spices such as coriander, cumin (jeera), pepper and turmeric as well as metals; the Multi Commodity Exchange (MCX) which mainly trades metals and energy contracts; and the National Multi Commodity Exchange (NMCE), which mostly trades spices and plantation crops.⁵ With a market share of close to 70 percent MCX is the largest commodity futures exchange in India, followed by NCDEX which has a market share of around 25 percent.

Finally, South East Asia has long had commodity exchanges for its major export crops, in particular palm oil, rice and rubber, with first Singapore, then Kuala Lumpur and now Bangkok all active in agricultural futures trading. The Singapore Commodities Exchange developed from the RAS Commodity Exchange, which had been trading rubber futures since the 1920s. The Kuala Lumpur Stock Exchange, founded in 1974, has traded palm oil futures since 1990. Indonesia and Thailand established their own

Comex in 1999 and trade gold, palm oil, rice, rubber, and tapioca (cassava). Both exchanges remain relatively thinly traded. Interestingly, other countries in South East Asia have not tried to set up their own commodity exchanges. Instead, Indonesia and Thailand use established exchanges in Kuala Lumpur and Singapore for hedging their export.

To conclude, this review of international experience indicates that historically auction floors for agricultural commodities often develop in parallel with WRS, which helped to stimulate demand from off takers for standardized contracts while providing the financing that increased volumes traded. National legalization meanwhile developed that ensure contract enforcement along with WRS and clearing houses that promoted the offsetting and fungibility of contracts. A solid legal and institutional framework together with volumes of trade that are sufficient make selected exchanges financial viable were therefore preconditions for the development of Comex and WRS. In recent years, the emergence of electronic trading platforms has given

⁵ See www.ncdex.com, www.mcxindia.com, and www.nmce.com.

further impetus to the consolidation of Comex, and to the development of regional networks of exchanges and warehousing arrangements.

We now turn to the experience in Africa South of the Sahara with Comex and WRS.

4 AFRICA'S RECENT EXPERIENCE WITH COMMODITY EXCHANGE⁶

Commodity trading in Africa dates back to the Portuguese in the 16th century (Eltis, 1994; Hopkins, 1973). However, Africa did not have any commodity exchange worthy of the name until 1995. In that year, following the fall of the apartheid regime in South Africa, the South African Futures Exchange (SAFEX), was established and subsequently became part of the Johannesburg Stock Exchange (JSE) in 2001.

SAFEX is the only derivatives-based exchange in Africa. Rather than developing slowly from a WRS to spot exchange to e-trading, it pursued a derivative based approach from its outset. The preconditions for establishing a Comex in post-apartheid South Africa were favourable as a network of large commercial farmers with farmer owned silos and silo receipts (SR), which are essentially negotiable WR, had developed during the apartheid regime. In 1994, the ANC Government liberalized the trade in grains by abolishing commodity boards while at the same time encouraging the private sector to develop alternative structured trade mechanisms. This included upgrading the market information service and the establishment of future and options contracts for white and yellow maize, wheat, soybean as well as sunflower on SAFEX. At the same time cooperative storage complexes started issuing farmers with negotiable silo certificates (SC), indicating location, quantity and grade to producers who deposited grain with them. These SC were the foundation for WRS as farmers could trade or use them to raise collateral financing from commercial banks (UNCTAD, 2009).

In 2004 the two leading silo operators in South Africa, who accounted for 60 percent of grain handled in the country, commissioned a software company to develop a system of electronic silo certificates (ESCs). When a farmer, trader or another market participant deposits grain in one of the approximately 160 approved silos, the warehouse operator creates a receipt that is validated and stored on a Johannesburg-based server. The holder can then access the system and transfer the receipt to other parties as title to the underlying goods or use it as security for a loan. Holders of warehouse receipts or their brokers can use the system to deliver on SAFEX contracts. This e-system also provides an online registry of warehouse receipts as well as various types of price and stock information to government agencies and other market participants (UNCTAD, 2009).

In 2008, Ethiopia established its own commodity exchange: the Ethiopian Commodity Exchange (ECX). The genesis of this exchange was very different from that in South Africa as it involved high level government backing and a more interventionist approach.⁷ Several international donors including UNDP, USAID, and the World Bank helped fund the establishment of ECX (Robbins, 2011). While the initial design for the ECX focused on grains, the volume traded on the ECX's increased by the enforcement of export mandates in 2008 for coffee and sesame seed as Ethiopia's two main export crops (Jayne et al, 2014; Robbins, 2011). These export mandates have ensured the financial viability of ECX while undermining the traceability of some of the speciality coffee grades that Ethiopia exports. It has also been argued that smallholder coffee farmers are unable to directly access the exchange (Jayne et al., 2014). ECX continues to dabble in cereals, with the World Food Programme (WFP) occasionally procuring maize through the exchange. However, a proposal to mandate maize, which is a secondary food staple in Ethiopia after teff was quashed because of fears of its impact on consumers. In addition, while the export mandate on coffee remains in force its provisions have recently been relaxed for certain coffee exporters. Since early 2018 exporters are able to export specialty coffee directly. Robbins (2011) comments that *'The cost of the exchange is a state secret'* and the current authors had difficulty accessing reliable information on its annual turnover.

Around the same time as ECX was established in Ethiopia several other Comex were started in southern Africa. These include ZAMACE in Zambia, which experienced something of a stop start history, and ZIMACE

⁶ This section was drafted with inputs from Adam Gross, and draws on AfDB (2018), Robbins (2011) and UNCTAD (2009).

⁷ IFPRI was involved in the establishment of the ECX through the former leader of its Ethiopia Country Strategy Support Program, Eleni Gabre-Madhin, who subsequently left IFPRI to become the first CEO of the ECX. See Gabre-Madhin (2011) for an accessible account of the establishment and early days of the ECX.

in Zimbabwe.⁸ Of the two exchanges, only ZAMACE still exists. Although, trading on its main platform was suspended between April 2012 and mid-2018 due to low trading volumes and concerns about potential conflicts of interest between brokers, many of whom were also traders (Jayne *et al.*, 2014).⁹ According to Robbins (2011), the cost of establishing ZAMACE in 2007 and between 30–50 percent of its operating costs were funded by international donors, in particular USAID.

In 2013 and 2014 there was sudden burst of activity with three commodity exchanges being established in Nigeria (AFEX), Rwanda (EAX), and Malawi (AHCX) along with the G-Soko structured trade and financing platform in Eastern Africa. All three exchanges invested heavily in electronic trading platforms from the outset. AFEX and EAX trading platforms are based on the NASDAQ OMS system, which allows market participants to buy and sell from any linked computer terminal. AFEX was opened by the President of Nigeria, EAX by presidents of Kenya, Rwanda, and Uganda. AHCX was launched by the President of Malawi. Table 1 provides an overview of selected Comex in Africa.

Table 1. Volume and turnover of selected Comex in Africa

Exchange	Volume (MT) 2016	Volume (MT) 2017	Turnover (US\$ millions) 2016	Turnover (US\$ millions) 2017
SAFEX, S. Africa	130,700,000	128,600,000	68.1	40.8
ECX, Ethiopia	669,877	672,980	1,034	1,311
AFEX, Nigeria	47,780	28,377	15.1	12.4
EAX, Rwanda	15,000*			TBC
ACE, Malawi	60,322	16,373	24.6	3.8
AHCX, Malawi	48,756	3,622	17.5	TBC

Sources: African Development Bank 2018; ACE, AFEX, AHCX, ECX, SAFEX

Note: * 2015

In addition, a further 12 Comex already exist or are being established. However, they ‘require significant work and/or structural adaptation before they can become operationally effective’ (AfDB, 2018: 68). These include: the Nigeria Commodity Exchange (NCX), the Akure Commodity Exchange (Nigeria), the Bolsa de Mercadorias de Mocambique (BMM), the Ghana Commodity Exchange (GCX), the Uganda Commodity Exchange (UCX), and planned initiatives in Cameroon, Cote d’Ivoire, Egypt, Kenya, Mauritius, Senegal, Tanzania and Zimbabwe.

Finally, beyond the 23 established or nascent African Comex mentioned above traders also use established Comex outside Africa for hedging and price discovery in a range of African value chains (AfDB, 2018). For example, the global sugar reference contract traded on the International Commodity Exchange allows for Africa delivery in six regional member countries and their customary ports.¹⁰ The cocoa, cotton and coffee contracts offered by ICE are extensively used by African value chain players. In North Africa and to a lesser extent in East Africa and the West African Atlantic coast countries, the Chicago Board of Trade/Mercantile Exchange benchmarks for imports of wheat and yellow maize are employed frequently by major international

⁸ Some sources would also include the Malawi Agricultural Commodity Exchange (MACE) and the Tanzania Warehouse Licensing Board (TWLB) in list of pre-2013 institutions. However, as MACE and the TWLB never functioned as trading platforms, they are not considered here. For more details, see AfDB (2018), Jayne *et al.* (2014), and Robbins (2011).

⁹ As with other thinly traded commodity exchanges, the low volumes traded on ZAMACE were also associated with fears of market manipulation (Sitko and Jayne, 2012).

¹⁰ Despite its name, the International Commodity Exchange (<https://www.intercontinentalexchange.com>) is actually a Fortune500 company headquartered in Atlanta, Georgia, USA with offices in Amsterdam, Calgary, Chicago, Houston, London, New York, Washington DC, and Winnipeg. It was established in 2000 and specializes in energy futures and credit trading, but also trades some agricultural commodities. ICE owns several clearing houses, the New York Board of Trade, and the Winnipeg Commodity Exchange.

grain traders. African traders also make some use of Asian Comex, particularly those in Malaysia, India and Singapore, as benchmarks in the palm oil, rubber and rice value chains.

In concluding this section and reflecting on the short lives of many commodity exchanges in Africa it may be useful to review the five pre-conditions set out for establishing a Comex exchange listed in Box 1 by Jayne et al (2014).

Box 1. Preconditions for the establishment of a Comex

Jayne *et al.* (2014) identify preconditions for the establishing a Comex:

- A pre-existing vibrant spot market;
- The potential to achieve sufficient volume traded across the exchange to cover its fixed costs;
- The presence of ancillary marketing services being offered, which enable a commodity exchange to be instituted at relatively low cost;
- Modes of institutional governance and appropriate incentives sufficient to motivate rapid learning on the part of Comex management;
- A commitment from government to desist from unpredictable and discretionary forms of intervention in commodity markets.

Although each of these pre-conditions are important the current author would stress the importance of pre-condition 2 (sufficient volume) as the proximate reason for the failure of many African commodity exchanges. Or, as the former CEO of the South African Futures Exchange stated when speaking to a seminar in Addis Ababa in 2010:

'If an exchange does not add value, it will not be sustained.'

Rod Gravelet-Blondin, 2010

5 MALAWI'S COMMODITY EXCHANGE LANDSCAPE

As has already been mentioned, Malawi is unusual in having not one but two commodity exchanges: Agricultural Commodity Exchange for Africa (ACE) and Auction Holdings Commodity Exchange (AHCX) Ltd.¹¹

ACE, which was established in 2006, followed the traditional model for establishing a commodity exchange: by gradually diversifying from physical spot auctions to an electronic bulletin board, to a WRS with certified warehouses, to forward contracts. ACE consists of two parts: ACE Ltd, a limited liability commercial company and ACE Trust a non-profit organization that has implemented various development projects. ACE has received substantial donor support since its inception and is now arguably the second longest running Comex in Africa after SAFEX.

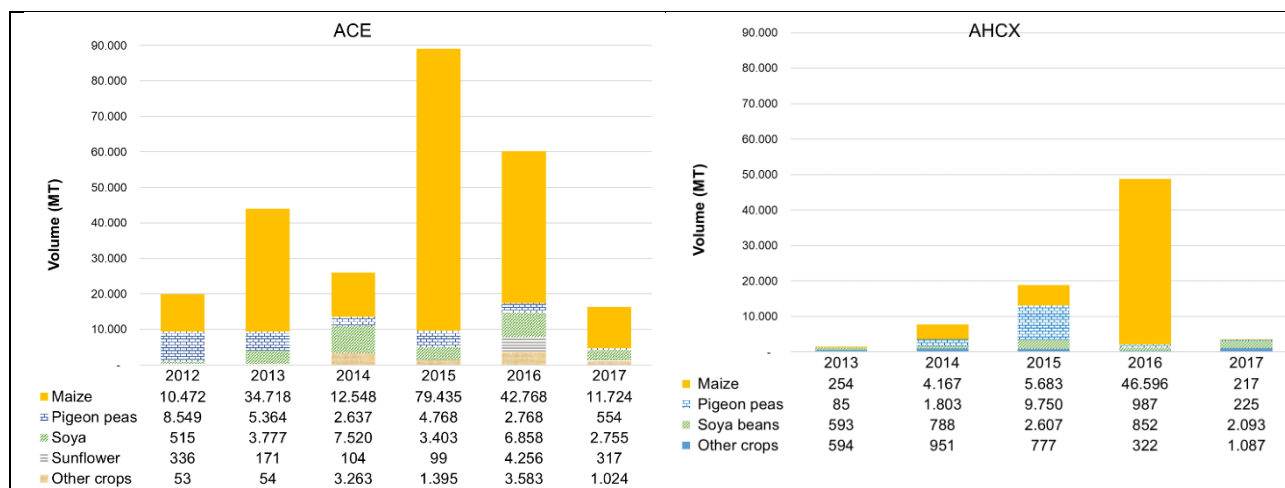
Established 2013, AHCX followed an alternative model similar to the East Africa Exchange (EAX) in Rwanda. Like EAX, AHCX invested heavily in e-trading infrastructure and exchange-owned warehouses followed by high profile launch involving the President of Malawi. AHCX is a 'fully commercial platform' owned by Auction Holding Ltd, which is itself partly owned by the Agricultural Development and Market Corporation (ADMARC), Malawi's main agricultural marketing and processing parastatal. AHCX enjoys considerable government support.

Following the collapse of the pigeon pea market in mid-2016, an above average harvest, but very low prices in the 2017/18 agricultural season both Malawian Comex experienced falling trading volumes. This resulted in substantial debts to commercial banks and in the case of AHCX to their parent company. The left and right panels of Figure 1 show the annual volumes traded by commodity on ACE and AHCX since 2012 and 2013, respectively. Maize is by far the most important crop, which makes the Comex vulnerable to fluctuations in harvests and traded volumes that Malawi often experienced. Paradoxically, poor agricultural years for Malawi are often good ones for the Comex and vice-versa because of higher

¹¹ The only other African country to have two commodity exchanges is Nigeria, which has both AFEX and NCX.

procurement by food agencies, such as the Strategic Grain Reserve of the Malawi government, or WFP for development partners. Pigeon peas have been the second largest traded commodity although the trade also declined sharply due to the imposition of import quotas by India in August 2017 (Me-Nsope and Nankhuni, 2018).

Figure 1. Volumes traded on ACE and AHCX, by commodity and year



Sources: Authors, using data provided by ACE and AHCX.

Note: the common vertical axis in these graphs

In addition to the Comex, Malawi also has auction systems for tobacco and tea, which are the nation's major export crops. These auction systems were established in the 1930s and late 1970s respectively (Gondwe and Baulch, 2017; Prowse, 2011). Around 24 percent of Malawi's total tea production is traded at auctions (National Statistical Office, 2016), while tobacco auctions account for all of Malawi's tobacco exports.

It should be noted that Malawi had no legal framework to govern their operations beyond general contract law when both ACE and AHCX were established. However, the recent Warehouse Receipt Act and the Commodity Exchange Directive have fundamentally changed this situation.

The Warehouse Receipt Act was approved by parliament in late 2017 and defines the legal status of warehouse receipts as documents of title. It clarifies the rights and obligations of warehouse operators and holders of warehouse receipts in accordance with international best practices. The Act specifies that purchasers of goods covered by a negotiable WR receipt shall acquire title to the document and the goods covered by the document. The title is superior to all other claims, with the sole exception of goods placed in the warehouse by a thief. The act also specifies that a warehouse operator shall have the right (lien) to keep goods covered by a warehouse receipt in lieu of accrued storage, transportation and insurance charges.

The Commodity Exchange Directive was approved by the Reserve Bank of Malawi (RBM) on April 3, 2018 and will come into force on April 3, 2019. The Directive includes provisions for the RBM to license and regulate the Comex. It prohibits the Comex from directly or indirectly trading on its own markets except under exceptional circumstances and with the approval of the RBM. It includes financial penalties for individuals or companies who maintain, inflate, depress or cause fluctuations in the market price for any commodity by fraudulent or fictitious transactions. However, it is not entirely clear how cornering and market manipulation are defined in the Directive. Finally, the Directive specifies that exchanges should be financially solvent, which would currently be problematic for both ACE and AHCX.

In addition to the WR Act and Commodity Exchange Directive, the Corporate Governance Directive gives RBM the right to veto Comex board members as they are regarded as financial institutions under the 2010 Securities Act.

Interviews with financial institutions and different market players indicated that the provisions of the WR Act and Comex Directive are still not widely understood. Nevertheless, both pieces of legislation provide a solid legal basis for the future development of Comex in Malawi.

6 WAREHOUSE RECEIPTS SYSTEMS AND COLLATERAL FINANCING IN MALAWI

The fragmented nature of Malawi's commodity exchanges is mirrored in Malawi's warehouse receipts 'system' which encompasses two formal systems (operated, respectively by ACE and AHCX) and warehouse receipts issued by large warehouses (which are often the subsidiaries of large processors and traders¹²) and are accepted as collateral for loans by many of the commercial banks.

It is important to distinguish between warehouse receipts (WR) and a warehouse receipt system (WRS). Warehouse receipts are documents that guarantee the quantity and quality of a commodity stored within an approved facility such as a warehouse and may (or may not) be accepted as collateral for a loan. In contrast, a WRS is a centralized system (usually electronic) for recording WR issued by a group of certified or registered warehouses, such as those belonging to the ACE or AHCX warehouse networks. WR issued by a recognized WRS have the advantage that there is a centralized register that can be checked to see if a particular WR has already been used as a collateral for a loan by another bank or financial institution. In contrast, a WR issued by one of the large warehouses could be copied and submitted to more than one financial institution as collateral for a loan at the same time. This is one reason why financial institutions in Malawi (and elsewhere) often employ collateral managers to verify the integrity of underlying commodities for which a WR receipt has been issued, along with regular checks on the subsequent physical presence and quality of the commodities in the warehouse. The two major collateral managers in Malawi are Grain Securities Ltd, which is a wholly owned subsidiary of Farmers World and Sokotec (now SIS Inspections), which has merged with GCC of South Africa. Collateral managers in Malawi offer two main services: (i) stock monitoring; and (ii) full collateral management. Stock monitoring involves physical monitoring of the stocks and reporting to the financial institution on 'as it is said to be' basis. The charge for stock monitoring ranges from US\$2,000 to US\$2,500 per warehouse per month. Full collateral management involves 24-hour monitoring of a warehouse, physical verification of the quantity, quality and type of the stock. In addition, it involves reporting to the financial institution of the 'verified stock' and custody of warehouse keys by the collateral management company. Charges for full collateral management range from US\$3,000 to US\$4,500 per warehouse per month. The collateral manager takes liability in the event of fraud. The cost of collateral management is usually added to the cost of the loan by the financial institution, although the risk of default—which in theory can be insured against by fidelity or indemnity insurance—is in practice borne by the financial institutions.¹³

The first WRS was introduced by ACE in 2011 followed by AHCX in 2014. Farmer associations and small traders generally view WR with caution if not outright skepticism, whereas large processors and trading companies normally accept them. Section 8 provides further details.

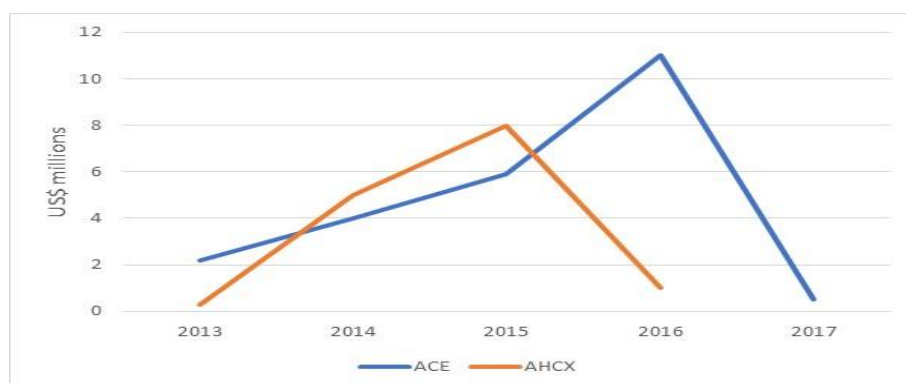
Figure 2 shows the volume of collateral financing advanced through ACE and AHCX since 2013.¹⁴ Collateral financing figures for 2018 are not yet available but it is known that ACE advanced over US\$4 million in collateral financing up to mid-2018. With the tighter agricultural conditions and higher prices in the current agricultural year, the volume of collateral financing advanced in 2018 may be expected to grow substantially from the low of 2017, although is unlikely to exceed the peaks reached in 2015 and 2016.

¹² For example, Grain Securities Limited (GSL) is a wholly-owned subsidiary of Farmers World.

¹³ See UNCTAD (2009) and Coulter and Shepherd (1995) for further information about WRS, and the closely related concept of inventory credit, in developing countries.

¹⁴ Unfortunately, despite many requests, AHCX has not provided details of the amount of collateral financing it advanced in 2017, but this figure is believed to be relatively small.

Figure 2. Collateral financing advanced through ACE and AHCX, 2013-2017



Source: ACE and AHCX

7 ALTERNATIVES TO COMMODITY EXCHANGES AND WAREHOUSE RECEIPTS SYSTEMS

The Comex and WRS are just one part of the commodity trading landscape in Malawi: for larger traders and processors various other alternative structured trading arrangements exist. Three of the most common other forms of structured trading arrangements are forward contracting, direct collateral financing of physical stocks, and vertically integrated supply chains. Each of these alternatives to Comex and WRS are described briefly below.

Forward contracts can be purchased through the large commodity traders (Cargill, ETG, Farmers World) and are commonly used by processors to hedge the cost of their raw materials. The large traders who issue these forward contracts, in particular large international commodity traders, may use future contracts on established Comex (such as SAFEX) to hedge their price risks or options contracts (which are also available on SAFEX) to lock in minimum or maximum prices.¹⁵ This potentially gives processors or other upstream market participants based in Malawi access to the benefits of derivatives trading without the need to actually trade on the Comex themselves.

Direct collateral financing of physical stocks is readily available from commercial banks for processors and large traders. The volume of such direct collateral financing from commercial banks far exceeds Comex-backed WRS financing available to farmers associations, medium scale traders, and other market participants. Commercial banks are prepared to advance more than 70 percent of the value of the underlying commodity as 'haircut' financing to trusted clients, especially when they can show an export or other forward contracts. However, the banks stipulate certain conditions such as the employment of a collateral manager (see previous section).

Vertically integrated supply chains such as nucleus estates and contract farming arrangements can provide many of the benefits of Comex (e.g., aggregation, quality standards, market information) without the need for an exchange. They also often offer preferential access to inputs and extension advice. Such vertically integrated supply chains are most developed for export commodities and plantation crops, which include coffee, cocoa, coconut, oil palm, sugar, rubber, tea, and tobacco. Although some pure estates (plantations) exist, most estates also allow smallholder farmers in the surrounding areas to supply the raw commodity to them to increase the throughput that goes through the estates' processing facilities (Dinham and Hines, 1982). There are many variants of such contract farming systems: some offer fixed prices to farmers (with or without bonus after final sale), while others introduce a 'principal' who will take a share of the crop produced.¹⁶

¹⁵ See the glossary at the beginning of this report for brief definitions of the futures and options, and CME (2006) for a longer discussion of their use in commodity trading.

¹⁶ Sharecropping arrangements date back to, at least, the *hectamori* system of ancient Greece (Cheung, 1969) in which one-sixth of the produce from a sharecropped field was given to the landlord, and the remainder split between the farmer and the provider of any inputs, such as seed and draught animals for ploughing.

8 PERSPECTIVES OF MARKET ACTORS AND OTHER STAKEHOLDERS

In this section we report on the results of our primary fieldwork involving semi-structured interviews with more than 45 market actors in May, June, and July 2018. Except for the financial institutions, who were asked different questions, these interviews followed a common format, which is provided in the Appendix.¹⁷ Doctorally qualified researchers conducted the interviews. English was the standard language and Chichewa was used for discussions with some small traders and farmers associations.

Table 2 provides a breakdown of the different categories of market actors and other stakeholders interviewed.

Table 2. Respondents to semi-structured interviews

Category	Number	Location
Commodity Exchanges	2	Lilongwe
Farmers Associations/ Cooperatives	11 (18)	Balaka, Blantyre, Chiradzuru, Dowa, Karonga, Lilongwe, Mchinji, Mulanje Mzimba, Mzuzu and Zomba,
Small and Medium-Scale Traders	9	Blantyre, Balaka, Karonga, Lilongwe, Mchinji, Mzimba, and Mzuzu
Processors and Feed Manufacturers	8	Blantyre and Lilongwe
Large Traders and Food Agencies	7	Blantyre and Lilongwe
Financial Institutions	7	Blantyre and Lilongwe
Government, Development Partners, and Civil Society Organizations	7	Blantyre and Lilongwe

With the exception of one state owned enterprise and two of the major trading companies who declined to be interviewed despite repeated attempts to contact them, all stakeholders identified were eventually interviewed. However, it should be noted that seven of the 18 Farmers Associations/Cooperatives selected (and previously identified as users of the Comex by key informants) stated that they had not actually used the Comex or WRS. In addition, useful responses to the value propositions described in the concluding sub-section could only be obtained from 32 of the 45 market actors interviewed.

Farmers were not interviewed directly as part of this study because they do not have enough marketed surplus to trade on the Comex or make WR deposits. A recent study of the pluralistic agricultural extension system conducted by Wandonda Consult for IFPRI, found that 2,627 of the 3,001 farmers interviewed had sold some of their crops but none of these had sold them directly to one of the Comex (Ragasa, forthcoming).

Farmers Associations and Cooperatives

This study interviewed a total of 11 farmers' associations/cooperatives who had traded on ACE or AHCX. The associations/cooperatives reported that they preferred this marketing platform because the Comex offer readily available markets and the possibility of negotiation, which is not the case with spot trades involving other buyers. This openness helped in ruling out of any possibility of fraud and exploitation by traders. Previously, farmers had to find their own markets. In many cases the easiest was selling to itinerant traders who tend to buy at very low farm gate prices using unstandardized equipment.

Association members also trusted the performance of equipment, such as weighing scales, offered by the Comex, in contrast to those used by small traders. Small traders are often said to take advantage of farmers' financial pressures during harvest periods to obtain lower prices. Furthermore, warehouses linked to the Comex not only safeguard the deposited commodities but also add value through standardized grading. Warehouses apply high quality fumigation and have professional warehouse managers with adequate skills

¹⁷ As respondents were assured on anonymity at the beginning of the semi-structured structured interviews, a list of the firms and organizations interviewed during this study is not provided in the appendices.

in agricultural commodity storage. Farmers are therefore assured of pest-free, well graded commodities that fetch higher prices at the time of sale.

The other compelling reason for farmers' associations/cooperatives to trade on the Comex is the option of accessing short-term loans through financial institutions via warehouse receipts. Although taking such loans is optional, association members view it as of great strategic importance given their need for cash. The mechanism ensures availability of liquidity for associations/cooperatives before sale of the commodity take place. Collateralizing deposits enables the farmers to access loans which they otherwise could not obtain to lack of collateral. Furthermore, some association members preferred the electronic payments offered by the Comex to cash based-transactions for security reasons. Electronic payment removed the need to carry large amounts of cash and electronic money transfers can be quicker than cash.

'The fact that the money was paid directly by the banks [via the Comex] ensured security of the payment and this was a very important benefit to us.'

Farmers Association Executive Committee Member

The biggest challenge faced by the associations related to delays in sales of their commodities. They also felt that the Comex offer lower prices for the commodities relative to spot trading, especially when there is no competition between off-takers on the platforms. Furthermore, they felt that transactional costs, especially storage charges, levied by the Comex were high.¹⁸

Cooperative members also highlighted the time taken to process WR based loans as another common challenge. Some farmers associations reported that it often took one to one-and-half months for collateral financing to be advanced. Farmers' association/cooperative members stated that the Comex's current warehouses are usually located far away from their farms. Because of the long distance to access warehouses, some farmers therefore opted to sell their crops to assemblers and other small traders. Farmers association/cooperative members suggested that some of these challenges could be addressed by empowering them to own warehouses that are linked to Comex.

One rice farmers' cooperative criticized the grading procedures used by ACE for rice. The cooperative complained that rice is not graded based on variety (aromatic or not), but on grain quality (broken or whole). This process was against their expectation, because aromatic varieties such as Kilombero carry relatively higher unit prices.

Comex were also encouraged to improve market information dissemination. Farmers association/cooperative members said that the Comex mostly provide information on price but not on quantity. They stated that the sales date should be agreed upon in advance, as is the case with tobacco. Other challenges included export bans on some commodities such as maize. The interviewees stated that whenever exports bans are in place assemblers, traders and off-takers buy from farmers at low prices. The bans are used as a bargaining strategy by traders to justify lower prices, as export markets for the crop are not accessible.

The issue of Comex regulation featured prominently in discussions with all farmers associations interviewed during the study. All preferred having a non-political independent body to enforce trading regulations in the commodity exchanges. They stated the presence of a regulations enforcement body will ensure transparency and accountability.

Although associations/cooperatives faced challenges with the Comex they still believe they can be viable markets for their commodities. They said that if Comex can be run more efficiently and transparently, the country can register high rates of agricultural production and productivity and in turn improve farmers' socioeconomic status. Comex and the WRS bring better market information systems, quality improvements and grading, and security of the deposited commodities to farmers. However, there are improvements needed, as reflected in the associations/cooperatives demands for downward revision to charges and fees, more speedy sales of crops deposited, and oversight by an apolitical body that represents all value chain actors.

¹⁸ Note that although withholding tax was not specifically mentioned by farmers associations/ cooperatives it is one of several charges that the Comex automatically include in their fees.

Box 2. Case Study: Chilozo Farmer Cooperative

Chilozo Farmers' Cooperative is located in Mulanje District in Southern Malawi, was formed in 2012 and registered in 2015. The cooperative started as a farmers' association but later turned itself into a cooperative not only to promote farming as a business venture but also to share the proceeds proportionately with members.

The cooperative currently has 176 members comprising 111 female and 65 male farmers. The cooperative's members grow and trade various crops including beans, maize, and pigeon peas. Since 2014 the cooperative has dealt with both ACE and AHCX. The cooperative was encouraged to trade on these exchanges because of the publicity campaigns mounted by both exchanges. These messages centered on the promise of better prices, improved grading and storage as well as linkages with financial institutions for collateral financing. These messages also assured the members of the availability of a good market for their crops.

The cooperative first dealt with AHCX in 2014 but later switched to ACE in 2016 because of ACE's marketing campaigns and promises. According to the cooperative's executive committee, ACE promised immediate payment after transactions by linking the cooperative to collateral financing from commercial banks. ACE also promised higher prices for their pigeon peas.

In June/July 2016 the cooperative first deposited 4.5 metric tons of pigeon peas with ACE and then obtained a loan of about one million MWK from FDH Bank with the warehouse receipt they were issued. The cooperative used this loan to purchase an additional seven tons of pigeon peas and by the end of September had topped up their warehouse deposit to 11.5 tons.

ACE had originally promised the cooperative that all sales transaction (including payment to the cooperative) would be made by October 2016 but did not find a pigeon peas buyer before the end of the year. During this time, interest and storage charges were accumulating. In January 2017 ACE found a buyer in Ntcheu district (about 200 km from Mulanje) who offered to buy their pigeon peas at MWK400 per kg. Out of desperation and frustration the cooperative accepted the offer. But after the sale took place ACE informed them that interest, storage, and other costs exceeded the proceeds of the sale and reported this to FDH Bank. At the same time, ACE demanded more deposits from the cooperative to meet its transaction costs while the bank asked for payment of the remainder of its loan. When the Bank realized that the cooperative would be unable to repay its loan and interest, it resorted to the courts to help in the recovery.

To worsen the situation further cooperative members took their executive committee to court because they claimed that the executive had stolen their produce through the bad deal with ACE. Some members of the cooperative became very bitter with this transaction and threatened ACE staff members coming to their area. Until now the court case has not been concluded.

Despite this predicament, some members of the cooperative still believe that the commodity exchanges offer better market platforms than selling their crops to vendors and other traders on the spot market. Spot transactions offer very low farmgate prices as vendors and other traders do not comply with the government set minimum farm gate prices.

Cooperative members want the exchanges to improve their services such as fixing sales dates with buyers, ensuring that warehouses are located closer to farmers, equipping warehouses with standard machinery that would add value to their crops, and appointing independent professionals to manage warehouses. Furthermore, members requested joint efforts by both Government and the donor community to help achieve these improvements.

Small and Medium-Scale Traders

The nine small and medium-scale regional traders interviewed during the study gave a wide range of reasons for choosing to trade on the Comex (ACE or AHCX). Most respondents reported that they preferred the platform because of its potential to offer readily available markets and transparency, which prevents fraud and exploitation. Furthermore, the depositors trusted the performance of the grading equipment, such as weighing scales and other storage facilities and services offered by ACE and AHCX unlike those used by vendors in the villages. They also liked the grading and fumigation services, which ensured adequate protection from pests and optimum pricing for their commodities. In addition, users appreciated that payment for their commodities was relatively faster implying that the institutions (ACE or AHCX) knew how to carry out their business well by quickly identifying markets for the commodities. Warehouse managers were perceived as professionals with adequate skills in agricultural commodity storage.

Furthermore, traders liked the idea of the Comex's linkage to financial institutions, which enabled them to access short-term loans through warehouse receipts. Some traders also preferred electronic payments to cash based-transactions for safety reasons.

'The money was paid directly to us by bank transfer. This was a very important to us, as it was more secure than cash payments'.

Medium-Scale Trader

Some traders mentioned that they had traded on both ACE and AHCX, usually selling soybeans and maize. Traders used both forward contracts and WRS financing. Reasons for trading with both ACE and AHCX included benefiting from higher prices through forward contract being assured of storage security for the deposited commodities; and that through the Comex they improve quality of the commodities by grading and fumigation in order to meet the Comex standards. This ensures scooping higher sales prices for them.

Interviewed traders recognized Comex as an open and transparent platform for procurement of the agricultural commodities. They further say payments for such transactions are always efficient. However, the interviewed Traders stated that they experience delays in the payments for the similar transactions if done through tendering process by the government. For instance, they said this erodes the confidence in the tender marketing process. While some traders believed that procurement through Comex spreads the benefits more widely than buying from large scale traders. For instance, last season, maize in the country was procured from as many as 14,000 suppliers which included small scale farmers as well as farmers' associations/cooperatives.

The traders further observed that Comex were still disorganized at the time of the current study. They recommended to regulate the system in the same way as tobacco, where marketing is done through the Tobacco Control Commission. Some traders also bemoaned the lack of or insufficient market information. Finally, some traders complained that Comex does not provide estimated sales dates and price predictions, which made decision-making by traders difficult.

Box 3. Factors discouraging traders use of Commodity Exchanges

- Comex prices for commodities are lower than those offered by other buyers
- Storage, packaging, handling, and other charges were 'too high'
- Distance to warehousing facilities
- Minimum quantities for WR deposits are 'too large'
- Grading of rice is not based on variety
- Long delays in arranging collateral financing
- Poor communications between Comex and the commercial banks, especially when problems arise
- Banks do not seem to understand Comex operations
- Long waiting periods before the stored products are sold
- Storage charges always increase but prices sometimes go down
- Most traders are not used to payment by bank transfers and prefer cash

Source: Interviews

Despite these criticisms, most traders saw potential value in the Comex, some of them made suggestions on how they could improve their operations. Both ACE and AHCX could improve on the warehousing facilities by providing more storage space and come up with more reasonable storage and handling charges. They also suggested that information on Comex prices and any other sales should be made available in form of SMS messages. Like the farmers associations/cooperatives, most small and regional traders also stated that there should be an independent non-political body established to provide oversight to Comex activities. The directors or the membership of this body should include competent professionals representing all actors in the agribusiness value chain. Such a body would approve the transparency and accountability of Comex transactions and promote a level-playing field for all value chain actors.

Processors and Feed Manufacturers

The eight processors interviewed in Blantyre and Lilongwe included poultry firms, oilseed processors, food manufacturers, and feed manufacturers. These firms typically had a negative view of the Comex. Most had experimented with both forward and spot contracts on the exchanges, to try to secure throughput for their processing operations. However, in all cases the volumes available was only a small fraction of their throughput. With most firms working substantially below their processing capacity, some oilseed processors had resorted to direct procurement from small traders and farmers groups to secure the volumes of soybeans, sunflower seeds, and groundnuts they require.

Processors' experience with spot contracts on the Comex was particularly poor. They experienced multiple defaults on spot contracts, in part because neither exchange has a mechanism for penalizing sellers who fail to deliver. In some cases, contrary to usual practice, either the Comex, its employees or the relatives of their employees had taken short positions in the market in anticipation of being able to fulfil contracts that they subsequently defaulted on. One of the largest of these led to a well-publicised court case and a change in ownership of one of the major oilseed processors.

Because of relatively plentiful supplies of maize and soya in the 2017/18 agricultural year, most processors had not felt the need to use the Comex last year. At the time the interviews for this study were conducted (in May/June 2018), only one of the processors interviewed was trading on either of the Comex, although all but one firm stated that they would do so if 'tighter' supply conditions developed later in the year.

Most of the large processors felt that vertically integrated contract farming arrangements offered more potential to secure throughput than trading through the Comex. One processor highlighted the incentive-based contracts for oilseeds that had been pioneered by the Malawi Oilseed Sector Transformation (MOST) project and was considering adopting these contracts in their own procurement operations. Another large processor stated that the firm would only enter into contract farming arrangements in conjunction with a suitable partner, who had expertise in and experience of agricultural production methods. Both processors saw contract farming as a way of improving both the quality of their supplies and the reliability of deliveries due to increased control over the value chain.

Two of the larger processors commented that their companies' reputation allowed them to obtain cheaper financing from commercial bank than via the Comex's WRS. The Export Development Fund's WR financing was also typically cheaper than the direct commodity financing offered by the commercial banks. However, for some feed producers, the WRS has provided a means of securing additional off-balance sheet financing after they stockpiled maize and soya following their main harvests. One feed manufacturer praised the collateral monitoring and responsiveness of the ACE WRS, while stating that the financial institutions involved in WRS loans did not have a good understanding of agricultural seasonality and took too long to make financing decisions.

'Banks in Malawi don't generally understand how agricultural finance and commodity exchanges work. They only understand tobacco.'

Poultry Producer

Two major processors were reluctant to use the WRS for financing because its charging of interest (*riba*) violates Sharia (Islamic) banking principles. While it is possible for WRS lending to be restructured so that

'profit' rather than interest is taken on a WR backed loan as ACE has done for some clients it is probably not worth the effort given the volumes involved.

Overall, the processors and feed manufacturers see potential value to the Comex and WR but do not feel that it has yet been fully demonstrated. They have, in particular, been discouraged from using the Comex for procurement by defaults on spot contracts. A better legal framework for the WRS together with tighter commodity supplies may, however, encourage them to use the Comex more over the coming years.

Large Traders and Food Agencies

The five large traders interviewed consisted of mostly Malawian companies with national trading networks and one Malawian branch of a large regional trading house.¹⁹ They were all aware of the Comex but had mixed views about them.

Most larger traders stated that they use the Comex to supplement their established direct marketing channels but did not derive a very large proportion of their throughput from them. Like many of the processors interviewed, most of the larger traders had experienced non-delivery on spot contracts taken on both exchanges but were more comfortable with forward contracts when backed by a WR. Again, like the processors, many larger traders seemed to expect the Comex to help in the aggregation of commodities, which is not consistent with international experience which suggests that aggregation normally takes place before contracts are traded on an exchange.

As most large traders have their own warehouses they can obtain direct collateral financing at cheaper rates from banks rather than via WRS. However, most found it convenient to use the WRS to obtain supplementary collateral financing or to supplement their own warehouse capacity in the immediate post-harvest season. One of the large traders interviewed had some of their warehouses certified by ACE.

'Any firm which has its own warehouse facilities can borrow directly from the banks, and therefore does not need to use the WRS.'

Large processor

Several large traders complained about the impact of withholding tax on the Comex and commodity trade more generally. Withholding of three percent is currently levied on food commodity transactions over MWK60,000, including trades on the Comex. Some larger traders argued that withholding was not consistently applied with some large companies and parastatals not required to pay it, which gives them a trading advantage. In addition, many smaller traders desire to avoid paying withholding tax and ask larger traders to pay them in cash or divide their purchase into multiple small lots. This is inefficient as it multiplies paperwork and circumvents electronic payment methods. Avoidance of withholding tax may also discourage farmers associations/cooperative from using the Comex. A back-of-the-envelope calculation suggests that levying withholding tax on Comex transactions might raise less than MWK 915 million (US\$1.2 million) per annum.

The two food agencies interviewed (ADMARC declined to be interviewed) have used Comex periodically for procurement of supplies in bad years. One agency had used Bid-Value Only (BVO) auctions on ACE to source local supplies of cereals and legumes. However, BVO auctions have not performed as they expected, mostly benefiting large traders and rarely reaching their targeted farmers associations. The agency is now developing alternative procurement mechanisms to ensure that farmers associations and cooperatives benefit from their purchases. The other agency regarded the Comex as a more transparent alternative to direct procurement from traders and has used both ACE and AHCX in one year and AHCX more recently.

Both food agencies stated that they believe that the Comex could help stabilize and improve the prices that farmers receive. They had not used and had little appreciation of the potential value of using futures on other regional exchanges (e.g., SAFEX and/or ZAMACE) for hedging or using options (which are currently only offered on SAFEX within Africa) for guaranteeing cereal supplies in bad years.

Taken together, our interviews with large national traders and food agencies suggest an interest in but a relatively low use of the Comex and WRS. Most large traders and food agencies used the Comex to

¹⁹ By contrast, the small and medium-scale traders only traded in specific locations or regions.

supplement their existing procurement activities from time to time but do not see them as central to their operations. Similarly, they used the WRS to supplement their existing warehousing capacity and the direct commodity financing obtained from the commercial banks. Greater reliability of contracts and lower cost structures would be required for national traders and food agencies to make more regular use of the Comex.

Financial Institutions

Over the last five years, five commercial banks and one government backed fund have advanced financing to the Comex, mostly for haircut financing of WRs.²⁰ Terms are typically a base rate plus three or four percent for a fixed period (usually three months), with 70 percent of the value of the underlying commodity advanced as a loan. However, some banks will advance haircut financing of up to 80 percent for export contracts or will make WR loans until the end of the agricultural year (late March). Most banks mark to market the value of these loans, and some have also tried to top-up the underlying commodity through physical margin calls (although typically WRS depositors have not been able to meet such margin calls in the middle of the agricultural year).

In most cases commercial banks have limited their exposure to piloting WRS because of the perceived risks of such lending. However, one commercial bank and the government backed fund advanced more substantial financing (totaling approximately MWK 7.3 billion) and have suffered substantial defaults due to defaults on export contracts for pigeon peas, whose market collapsed in the second half of 2016. At present around half of its WR loans are non-performing and the bank involved stopped making WR loans at the end of 2016.

In addition to offering financing to the Comex's WRS most of the commercial banks made direct commodity financing available to the large trading companies and processors. The volumes loaned here are much larger than by the official WRS and are linked to a collateral management or monitoring by a third party appointed by the bank. These loans are typically offered at base rate + 2% to 3% employ collateral managers/monitors to keep track of the underlying commodity and aim to supplement the commercial bank's traditional balance sheet to large firms. As the reputations of these firms are well-known to the banks these loans are generally regarded as more secure than WR loans. In some cases, US Dollar or Rand denominated loans will be made for export contracts. For direct commodity financing, which is perceived to be of higher risk, some banks require the borrowing firm to sign a revenue assignment agreement which gives the bank first call on revenues arising from the contract financed. Other banks require that letters of credit on export contracts are processed through their parent banks. Nonetheless, there have been two or three cases of default of direct commodity financing agreements by large traders in Blantyre. Most of the financial institutions offering direct commodity financing complained about the efficiency and honesty of the collateral managers they employed.

'What about collateral management? Well yes, I think it would be a good idea!'

Senior Manager, Commercial Bank

Until November 2017 there was no legal framework for WR lending in Malawi. Therefore, WR loans followed the nature of a 'gentlemen's agreement' with little legal enforceability. This deterred many commercial banks for advancing substantial financing to WRS. The passing of the Warehouse Receipt Act in late 2017 created an accepted legal framework for WR lending and made capital/tax relief available on the financing advanced. In the light of their experience with pilot WRS lending prior to 2016, two of the commercial banks are currently designing new WR financing products for the 2018/19 season. If the sale of such products can be linked to larger off takers these WR products might provide additional liquidity to the exchanges.

For the financial institutions one advantage of Comex backed WRS schemes in comparison with direct commodity financing is that the Comex performs the role of the collateral manager/monitors. As collateral managers/monitors typically charge over US\$2000 per warehouse per month, using the Comex as collateral monitors is financially attractive to the financial institutions as well as to the borrower who must ultimately pay collateral management charges. However, in the case of ACE certified warehouses, the owner of the

²⁰ 'Haircut' financing, which involves financial institutions advancing loans up to certain percentage of the current value of the underlying commodity, which is usually backed by a WR. The difference between the value of the loan and the commodity is known as 'the haircut' (see glossary).

warehouse still has the power to approve commodity withdrawals without the permission of the collateral monitor. The expansion of warehouse facilities under the European Investment Bank's Euro 35 million Agri storage Facility with the National Bank of Malawi, which is now approximately 90 percent drawn down, may give additional impetus to WR schemes as it includes specific provisions for third party warehousing.

Government, Development Partners and Civil Society Organizations

During this study we consulted two government departments, four development partners, and two civil society organizations.²¹ As with the financial institutions, a set interview format could not be used for these interviews because of the diversity of interests and views expressed.

The lack of a commercial focus was a distinct feature of most of these interviews. Government agencies saw the Comex as a way to promote structured markets in Malawi, as they had been mandated to do by the President in 2015. They favored the use of export mandates along the lines of the ECX model to both increase the volume of commodities traded on the exchanges and to control the 'price-gouging', transfer pricing, and other 'exploitative practices' of traders and 'middlemen'. There was limited appreciation of empirical evidence that restricting trade in this way can sometimes backfire and lead to higher rather than lower volumes of cross-border trade.²² Government agencies perceived the setting of minimum farmgate prices (MFG) as a way to ensure that farmers received 'fair prices' that covered their costs of production, despite considerable empirical evidence suggesting that MFG prices are rarely binding (Baulch, 2017).

The Development Partners and civil society interviewed together with other members of the Donor Committee on Agriculture and Food Security (DCAFS) typically believed that Comex and WRS were a way to promote the commercialization of agriculture while ensuring higher prices for farmers and promoting competition among traders. Such views are largely contrary to international experience which indicates that larger traders and warehouse operators are the primary beneficiaries of the introduction of Comex and WRS. Only once volumes transacted build up benefits of competition and improved price discovery begin to benefit farmers.

Most Development Partners consulted did not realize the two Comex face a very serious financial situation, which verges on bankruptcy.

9 VALUE PROPOSITIONS

This section summarizes the results of 32 semi-structured interviews with farmers associations and cooperatives, regional traders, processors and national traders conducted by IFPRI Malawi between late May and early July 2018.²³ In addition to answering questions about their organizations' marketing practices and financing, participants were asked to say whether they (1) strongly agreed, (2) agreed, (3) disagreed, or (4) strongly disagreed with the eight value chain propositions about the commodity exchanges and warehouse receipts.

The overall responses to the value propositions are summarized in Table 3 below, while the distribution of scores by category of respondent are shown in Figures 3a to 3h the next page.

²¹ The DCAFS (Donor Committee for Agriculture and Food Security) group was also consulted about the terms of reference for the study. The slow responses of many of the development partners represented on the Committee delayed the start of the study's fieldwork by approximately six weeks.

²² See IFPRI (2016) for more on this, with specific reference to the maize and oilseed sectors.

²³ Responses from interviews with the commodity exchanges, along with one processor, two traders and three farmers associations who were interviewed but declined to answer or gave highly incomplete answers to the value chain propositions questions, are excluded from the graphs. The two national food agencies interviewed are included in the processors and national traders category.

Table 3. Overall responses to the value propositions

	Value Proposition	Mean	Median
1	My firm/organization lacks information about future market prices for the commodities it trades	1.9	2.0
2	My firm/organization would be willing to move away from cash-based transactions if profits were higher as a result	1.7	1.0
3	My firm/organization would benefit from moving to standardized grades and quality standards	1.4	1.0
4	The commodity exchanges help my firm reach new buyers	2.6	2.0
5	My firm makes a higher return by storing in a warehouse linked to one of the commodity exchanges	2.9	3.0
6	My firm would gain advantage if our warehouses could be linked to a commodity exchange	1.4	1.0
7	My firm has access to enough working capital to fund its commodity trading activities	2.5	2.0
8	My current sources of finance are cheaper than obtaining finance using warehouse receipts	2.0	1.0

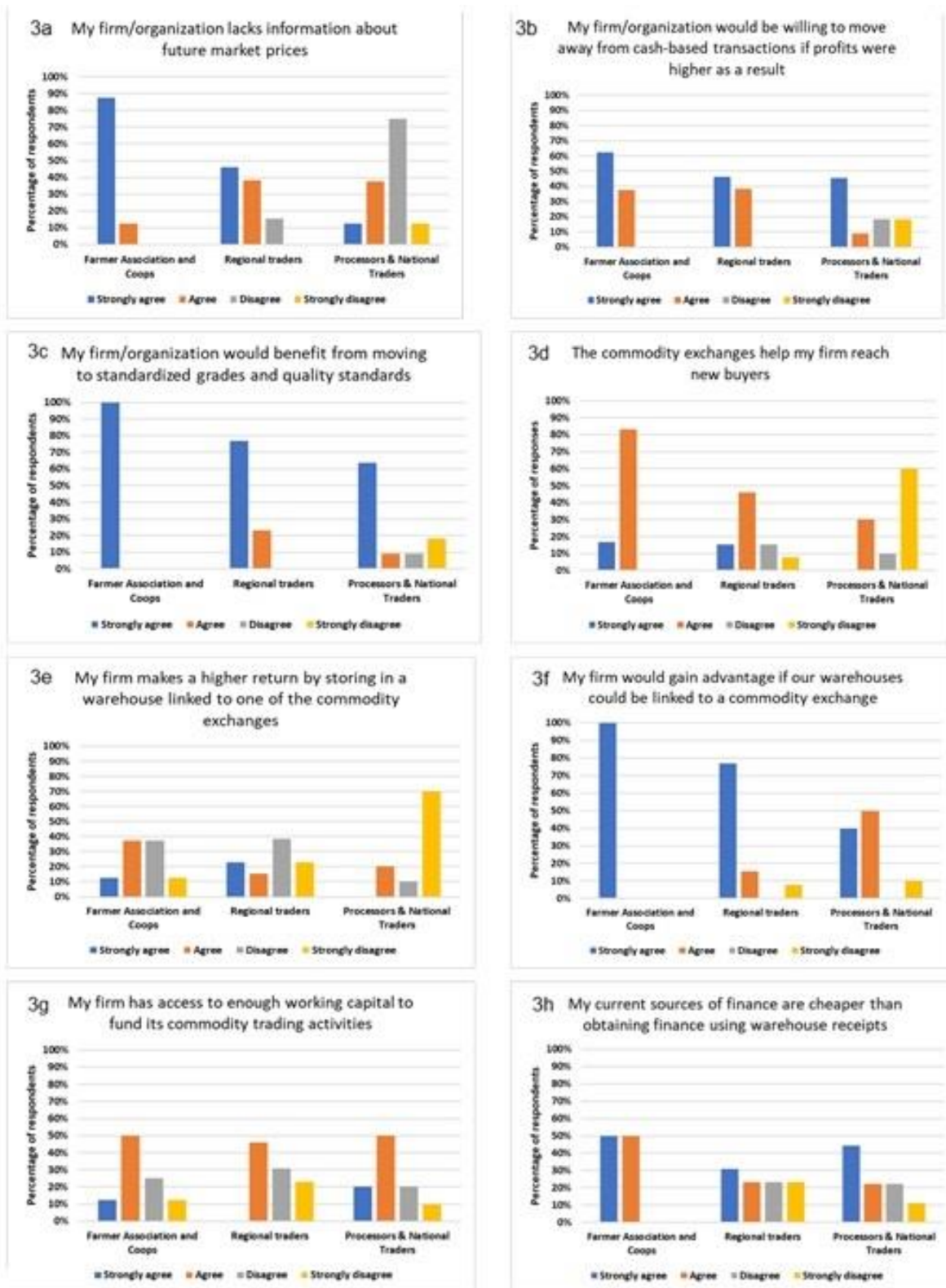
Note: The level of respondents' agreement or disagreement was assessed using the following Likert scale: 1-Strongly agree, 2-Agree; 3-Disagree; and, 4-Strongly Disagree.

The scores in Table 3 indicate broad agreement with five of the eight value propositions. The exceptions were propositions 4, 5, and 7, namely: 'The commodity exchanges help my firm/ organisation reach new buyers (#4); 'My firms/organisation makes a high return by storing in one of the warehouses linked to the commodity exchanges' (#5); and, 'My firm/organisation has enough working capital to funds its commodity trading activities' (#7). The higher mean and median scores recorded for these three propositions in Table 3 suggest a higher level of disagreement with them than the other five value propositions, which have mean and median scores of less than or equal to two (indicating a high level of agreement).

It is helpful to 'drill down' into how responses to the value proposition differ by category of market participant. This is done in Figures 3a to 3h, which show the responses for three categories of participants for each of the eight value propositions in turn.

In response to Proposition #1 farmers associations/cooperatives and, to a lesser, extent regional traders agreed that they lacked information about future prices, while three-quarters of larger traders and processors disagreed with the statement. This is partly due to larger traders' ability to access information on future market prices from other regional and international Comex. All farmers associations/cooperatives and regional traders strongly agreed or agreed with the statement that they would be willing to move away from cash-based transactions if their profits were higher as a result (Proposition #2) but a significant minority of large traders and processors (in particular processors) disagreed with this statement because they feared it would reduce their throughputs. All farmers associations/cooperatives and three-quarters of regional traders strongly agreed that they would benefit from standardized grades and quality standards (Proposition #3) but around 30 percent of larger traders and processors disagreed or strongly disagreed with this statement. Or, as one feed manufacturer put it, 'chickens don't know the difference between good and bad maize!' Very few firms, strongly agreed with Proposition #4 (that the Comex helped them research new buyers) but farmers associations/cooperatives were much more likely to agree with this statement than regional traders, larger traders and processors.

Figure 3. Distribution of scores by category of respondent



Source: IFPRI semi-structured interviews, May/June 2018

Seventy percent of larger traders and processors disagreed with the statement that they earned higher returns by storing in a warehouse linked to one of the Comex (Proposition #5), which is consistent with these firms use of direct collateral financing. Farmers associations/cooperatives and regional traders had mixed

responses to this question. All farmers associations/cooperatives and three-quarters of regional traders responding to Proposition #6 (my organization would gain an advantage if our warehouses could be linked to a commodity exchange) strongly agreed with this statement, while around ten percent of larger traders and processors strongly disagreed with this proposition, and a further 50 percent just agreed with it. This reflects larger traders and processors experiences with delays in the WRS along with problems of collateral management. Over 70 percent of large traders, processors, and farmers associations agreed or strongly agreed with proposition #7 (My firm has access to enough working capital to fund its commodity trading activities) compared to 45 percent of regional traders.

All farmers associations/cooperatives agreed or strongly agreed with the statement that their current sources of finance were cheaper than obtaining financing through WRs (Proposition #8) while 30 to 40 percent of regional traders, large traders, and processors disagreed or strongly disagreed with this statement. This reflects the limited understanding of the various charges and fees involved in using WRS financing of farmers associations, together with their recent problems in selling pigeon peas.

10 CONCLUSIONS

Malawi is unusual in having not one, but two Comex: The Agricultural Commodity Exchange (ACE), established in 2006, and Auction Holdings Commodity Exchange (AHCX) Ltd, established in 2013. Furthermore, several parallel 'systems' exist that advance collateral financing using warehouse receipts. This study examined the landscape in which Malawi's two Comex and WRS operate. A mixed methods approach was adopted, involving a review of the international literature, compilation and analysis of secondary data from Malawi and other African Comex, and semi-structured interviews with key market participants.

The review of international experience in North America, Latin America, Europe and Asia indicates that historically Comex often develop hand-in-hand with WRS. WRS help stimulate demand from off takers for the standardized contracts traded by Comex, while providing financing that increase volumes traded. In recent years, electronic trading platforms have given an impetus to the consolidation of existing Comex and the development of regional networks of exchanges and warehousing arrangements. Nonetheless, a common reason why Comex fail is that they do not attract sufficient trading volumes to pay for their operating costs. This is often associated with default on contracts and fears of market manipulation or the cornering of particular commodities. Of the 23 Comex in Africa, over half are still in their planning or inception stages. With the notable exception of the agricultural futures and options traded on the Johannesburg Stock Exchange, most of the remaining Comex in Africa are thinly traded and receive financial support from their governments and/or international donors.

Malawi is one of only two countries in Africa to have two Comex; the other being Nigeria. Volumes traded on Malawi's two Comex, ACE and AHCX rose rapidly from under 50,000 metric tons (MT) in 2013 to almost 115,000 MT in 2016, but then declined to less than 20,000 MT in 2017. This decline was due to much lower demand for grains by the food agencies, due to a favorable harvest in 2017, and the imposition of quotas by India on pigeon pea imports the previous year which led to a collapse in pigeon pea exports from Malawi. Processors and large national trading companies account for most of the volume traded on the Comex, but with periodic and sizeable interventions by the national food agencies in some years. However, these volumes form a relatively small proportion of total throughput and turnover for processors and large traders, who view the Comex and WRS as useful supplements to their main channels of procurement and financing. Furthermore, a recent nationally represented survey of over 3,000 farm households identified no farmers who had traded directly on the Comex. A separate trader survey together with the semi-structured interviews conducted for this study found only a minority of farmers associations/cooperatives and small traders who had used the exchanges. Some farmers associations have had unfavorable experiences with Comex mediated WRS loans, especially for pigeon peas, in the last few years.

The semi-structured interviews indicate that farmers associations/cooperatives, traders, processors, and the financial institutions do see potential value to the Comex and WRS but feel that it has not yet been fully demonstrated. Farmers associations and small traders are deterred from using the Comex by delays in sales, high charges, and a desire to avoid paying withholding tax. Processors, feed manufacturers, and large traders are discouraged by the relatively limited volumes available for purchase on the Comex, frequent defaults on spot contracts, and the cost of employing collateral managers for WR backed financing. The financial institutions also view the WRS as having potential but regard WR backed loans as a risky activity

that until recently had little legal enforceability. The passage of the Warehouse Receipt Act in late 2017 and the Commodity Exchange Directive, which will come into force in April 2019, may encourage them to use the Comex and WRS more over the coming years. Other stakeholders, including the national food agencies, often had unrealistic expectations of what the Comex and WRS would do in terms of increasing or stabilizing the prices received by farmers.

Lastly, it should be recognized that Comex and WRS are not a panacea to all the problems that smallholder farmers, traders (of all sizes), and processors face in Malawi. They are a part, but only a part, of a wider structured trading system which also includes individualized forward contracts, direct collateral financing, and vertically integrated supply chains for the export crops.

To conclude, we suggest a series of short and medium-term recommendations to improve the performance of the Comex and WRS in Malawi. Some recommendations are generally accepted but three are more controversial.

11 RECOMMENDATIONS AND POLICY SUGGESTIONS

The recommendations and policy suggestions from the study are divided into three categories:

- I. quick wins, around which there is a considerable amount of agreement, which can be implemented relatively quickly;
- II. medium and longer-term recommendations, with again a reasonable degree of agreement, but which will take several years to implement; and
- III. three more controversial proposals.

I. Quick Wins

The quick wins (or 'low hanging fruit') that can be identified for Malawi's Comex and WRS include:

- Harmonize ACE and AHCX's grading systems.
- Promote storage using WR to farmers' associations/small traders without linking them so closely to collateral ('haircut') financing.
- To limit financial exposure, commercial banks should set 'strike prices' (triggers) for sale of stocks and establish term limits for collateral-based loans (whether backed by official WRS or other forms of receipts).
- Promote collateral management as an alternative income stream for Comex to commissions and fees. Doing this requires indemnity (or fidelity) insurance.
- Comex should strictly enforce regulations on own-account trading in the Commodity Exchange Directive (by both themselves and their employees).

II. Medium and Longer-Term Recommendations

The three relatively non-controversial medium and longer-term recommendations are:

- Rationalize ACE and AHCX operations to promote synergies and reduce overlaps
- Offer ZAMACE/JSE futures contracts on Comex (or other platforms) in Malawi
- Set-up a single WRS for Malawi

First, ACE and AHCX operations should be carefully examined to promote synergies and reduce overlaps. This would include the standardization of their grading systems that has already been mentioned under the quick wins, along with adoption of a common system for clearing contracts.

Second, the recent establishment of Rand denominated futures contracts for maize, soybeans, groundnuts and wheat on ZAMACE offers the potential for Malawi traders and parastatals (and perhaps some of the bigger processors) to hedge their purchases or sales. The level of basis risk (that is the variability between future and spot prices) involved is not yet known. However, given Zambia's proximity, it seems reasonable to suppose that basis risk will be lower than when trading on SAFEX/the JSE. Indeed, if one of the Comex were

to start offering ZAMACE futures on their platform, this could help spread hedging and other commodity trading strategies using futures.

Third, in the interests of transparency, it would also be useful to bring the WRS operated by the two exchanges under a single umbrella. The fact that both ACE and AHCX operate their own WRS in parallel with other warehouse receipts issued by large trading companies makes collateral financing more complicated and risky than necessary. Most countries have a single independent WRS that is accepted and trusted by all market participants. In most countries (e.g. South Africa and the US) WRS are operated by and for the private sector. However, in other countries (e.g., Latin American and parts of Eastern Europe) WRS are under the control of a government parastatal.

III. Some Controversial Proposals

Finally, three more controversial proposals deserve to be outlined. These are:

- Establishing an independent body to oversee the Comex, in addition to financial regulation by the Reserve Bank of Malawi.
- Merging ACE and AHCX into a single exchange.
- Removing withholding tax on food commodity transactions greater than MWK 60,000.

The first more controversial proposal stems from frequent suggestions made during our semi-structured interviews with farmers, processors and traders, who clearly wanted a politically independent body to oversee the operation of the Comex in addition to the regulation exercised by the RBM. They argued that this body should be representative of different groups in the value chain and also be independent of Government. There are well-established precedents for this kind of independent body in the commodity exchange landscapes of other countries (e.g., the Commodity Futures Trading Commission in the USA, or the Financial Conduct Authority in the UK, which has the remit for both commodity and financial futures and options trading. Such bodies operate in addition to the central bank and are widely perceived as supplementing and strengthening the oversight of commodity trading rather than replicating the regulatory functions of the central bank.

The second proposal stems directly from the thinly traded and volatile nature of Malawi's two Comex. Some analysts might say that a country the size of Malawi is too small for even one commodity exchange given the existence of other Comex such as SAFEX and ZAMACE in the region. The authors would not go quite as far as this but splitting the relatively limited volume of commodity trade in Malawi across two exchanges clearly undermines their financial viability. Both ACE and AHCX have only been able to keep going as long as they have because of external financial support. ACE receives aid from Development Partners, while AHCX receives support from its parent company Auctions Holdings Limited and enjoys access to highly preferential credit terms. Without such financial support, ACE and AHCX would probably either merge or go into liquidation.

Finally, our interviews with both small and large traders confirm that requiring withholding tax to be paid on food commodity transactions of more than MWK 60,000 impedes the development of an electronic payments system, while driving much of the assembly trade on to a cash-in-hand basis. A back-of-the-envelope calculations suggests that levying withholding tax on Comex transactions raises less than MWK 915 million (US\$1.2 million) per annum at the cost of driving much of the food trade into the cash economy.

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- Ethiopian Commodity Exchange (ECX): www.ecx.et
- Johannesburg Stock Exchange (JSE)/South African Futures Exchange (SAFEX): <https://www.jse.co.za/trade/derivative-market/commodity-derivatives>
- Kenya Agricultural Commodity Exchange (KACE): www.kacekenya.com
- Zambian Agricultural Commodity Exchange (ZAMACE): www.zamace.com

13 APPENDIX: INTERVIEW CHECKLIST

International Food Policy Research Institute (IFPRI)

Malawi Strategy Support Program (MaSSP)

Introduction

Good morning/Afternoon. My name is and I am working with IFPRI Malawi. IFPRI is an international organization that does research on different aspects of agricultural development. We are currently conducting a study on the **COMMODITY EXCHANGE** landscape in Malawi to understand more about structured grain/cereal trading, challenges that **traders like you** experience and possible ways to overcome them. You were selected to participate in the survey because **you trade in grains/cereals**. Your responses will be **COMPLETELY CONFIDENTIAL** and will only be used for research purpose. Your responses will be added to those of other traders and analyzed together. We will never use the information in a way that identifies you or your business. Your participation is voluntary and you can choose not to answer any or all of the questions if you want. However, we hope that you will participate since your views are very important to us.

Are you, or is the company you work for, engaged in trading grains/cereals? If so, are you the person most knowledgeable about trading activities i.e., the details of how you buy and sell grains/cereals?

Your decision to participate in this interview, or not, will in no way affect, either positively or negatively, your chances of your commodities.

The survey should take about 45 minutes.

Are you willing to participate in the survey?

Do you have any questions?

Identifying Information

Questionnaire number: (Pre-filled)			_ _ _ _
First name: (Pre-filled)		Firm ID (Pre-filled)	_ _

District name		District code	_ _ _
Urban/Rural	Urban = 1, Rural = 2		_
Name of respondent			
Phone contact of the respondent			
Gender of respondent	1 = Male, 2 = Female		_
GPS coordinates.....	_ _	_ _	_ _ _
	DD	MM	mmm
Date of interview	_ _	_ _	20 _ _ 8_
	Day	Month	Year
Time of interview start:	_ _ : _ _	Time of interview end:	_ _ : _ _
Enumerator name		Enumerator code	_ _ _

The following questions ask about your firm/organization's marketing activities.

A1. What is the main activity of your firm/organization?	_	1 = Large trader 2 = Medium trader 3 = Processor 4 = Large farmer 5 = Farmers Association					
A2. Has your firm/organization used one of the commodity exchanges? (If YES go to A3, otherwise go to A14)	_	1 = Yes 2 = No					
A3. Kindly specify the Commodity exchange, activities and commodities involved							
	Commodity			Activity			
	a	b	c	d	e	f	
1	ACE	_ _	_ _	_ _	_	_	_
2	AHCX	_ _	_ _	_ _	_	_	_

Commodity codes:		Activity codes:
1 = Maize grain	6 = Beans	1 = Spot trades
2 = Soya	7 = Groundnuts	2 = Forward Contracts
3 = Processed soya	8 = Rice	3 = Warehouse Receipts
4 = Sunflower	9 = Sorghum	
5 = Pigeon peas	10 = Cowpeas	
	11 = Other (specify)	

A4. What are the THREE important reasons you chose to trade through ACE?	
1	
2	
3	
Notes:	
A5. What are the THREE important reasons you chose to trade through AHCX?	
1	
2	
3	
Notes:	

A6. Have you ever switched from one commodity exchange to another?		_ 1= Yes, 2= No (If No, go to A9)	
A7. If YES, which exchange did you switch to?			
A8. What were the reasons for switching to another exchange?			
1			
2			
3			
Notes:			
(Probe and record ONLY reasons other than those mentioned in questions A4 and A5 above).			

A9. Kindly give details of the FIRST and LAST times you engaged with any of the commodity exchanges							
		Year	Month	Exchange	Activity	Commodity	Approximate Volume (MT)
		a	b	c	d	e	f
1	First			_	_	_ _	
2	Last			_	_	_ _	
Month codes:		Exchange codes:		Activity codes:		Commodity codes:	
1 = January		1 = ACE		1 = Spot trade		1 = Maize grain	
2 = February		2 = AHCX		2 = Forward Contracts		2 = Soya	
12 = December				3 = Warehouse Receipts		3 = Processed soya	
						4 = Sunflower	
						5 = Pigeon peas	
						6 = Beans	
						7 = Groundnuts	
						8 = Rice	
						9 = Sorghum	
						10 = Cowpeas	
						11= Other (specify	

A10. Approximately how many times have you used one or both exchanges since 2014 and for what activities and commodities?				
		Activity	# of times	Commodity
1	ACE		_	_ _
2	AHCX		_	_ _
Activity codes:		Commodity codes:		6 = Beans
1 = Spot trade		1 = Maize grain		7 = Groundnuts
2 = Forward Contracts		2 = Soya		8 = Rice
3 = Warehouse Receipts		3 = Processed soya		9 = Sorghum
		4 = Sunflower		10 = Cowpeas
		5 = Pigeon peas		11= Other (specify

A13. Please indicate whether you strongly agree, agree, disagree or disagree with the following statements		1 = Strongly agree
		2 = Agree
		3 = Disagree
		4 = Strongly disagree
1	My firm/organization lacks information about future market prices for the commodities it trades	_
3	My firm/organization would be willing to move away from cash-based transactions if profits were higher as a result	_
4	My firm/organization would benefit from moving to standardized grades and quality standards	_
5	The commodity exchanges help my firm reach new buyers	_
6	My firm makes a higher return by storing in a warehouse linked to one of the commodity exchanges	_
7	My firm would gain advantage if our warehouses could be linked to a commodity exchange	_
8	My firm (already) has access to enough working capital to fund its commodity trading activities	_
9	My current sources of finance are cheaper than obtaining finance using warehouse receipts	_
A14. What are the main factors that discourage your firm/organization from using the commodity exchanges (more)?		RANK 1= Highest

(describe for post coding)		2= Medium 3= Lowest
1		
2		
3		
<p>Notes:</p> <p>(expect to find long or delayed payments, cost of commissions, storage charges, high interest rates for collateral financing, security of warehouses, complicated or excessive paperwork here but don't prompt with these responses).</p>		

A15. What do you think could be done to overcome these problems and make the commodity exchanges work better for you?

- a. _____

- b. _____

- c. _____

A16. Are there any other comments/observations that you would to make about the functions or development of Malawi's commodity exchanges?

- a. _____

- b. _____

- c. _____

A17. In your own assessment, who do you think should regulate structured trading here in Malawi? Why?

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