

HOT OR NOT: CHANCES OF SUCCESS FOR THE LAUNCH OF THE RED CHILLI FUTURES CONTRACT BY THE PAKISTAN MERCANTILE EXCHANGE

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**Abstract**

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*In September 2015, the Pakistan Mercantile Exchange (PMEX) launched a contract in red chilli, its first new agricultural contract since its inception. The purpose of this article is to evaluate the decision-making process of PMEX and to assess the likelihood of success for the red chilli contract in the light of established criteria for the likelihood of success for a derivative contract, and yet also to question the appropriateness of those criteria.*

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**Introduction**

In 2014, 1.4bn agricultural derivative contracts were traded throughout the world, approximately 6.4% of the total derivative traded volume (FIA 2015). Exchanges that host agricultural derivative contracts, most of which are now like PMEX profit-making institutions, are constantly searching for new contracts to increase their revenues and diversify their risk.

Not all contracts launched succeed. Silber (1981) estimated that between two-thirds and three-quarters of new contracts fail to attract and sustain a profitable level of trading volume, Kolb (1991) equally found that only three of every ten new futures contracts end up as a profitable product on the exchange, whilst Carlton (1984) analysed the longevity and competition of US futures contracts between 1921 and 1983 and discovered that most futures innovations fail within 10 years of their introduction – fail in the sense that they are either withdrawn by the Exchange or operate as ‘zombie’ contracts that are listed but do not trade. It should be noted that Exchanges withdraw contracts largely for marketing reasons: once launched, a contract costs virtually nothing for an Exchange to maintain, especially on an electronic platform. As launching an agricultural futures contract is expensive for an Exchange – exact costs are difficult to isolate, probably less than \$1m but certainly running into the many thousands of dollars - this problem merits continued study, especially in the developing country context where resources to enable Exchanges to launch successive contracts may be scarce.

First however, what is success? There are many criteria for the success of futures contracts. As the level of trading required for profitability varies between Exchanges, measures of success that have been used in previous studies include the length of time traded (Silber 1981) or levels of annual volume of trading such as an arbitrary cut-off point of 1000 contracts traded annually (Sandor 1973), 10,000 contracts annually, (Silber 1981), 10,000

contracts monthly (Holder, Tomas and Webb 1999) 1,000 contracts daily (Carlton 1984) or even 10,000 contracts daily (Dew 1981). However there are three problems with this kind of arbitrary criterion.

(i) The results of analysis based on these different criteria for success may produce quite different answers as to the criteria for success: what might make for a moderately successful contract trading 1,000 contracts annually might be quite different from those that determine the success of a contract trading hundreds of times more.

(ii) Even viewed in a crude quantitative way such as number of contracts traded, success for an agricultural contract may be viewed in a much more lenient fashion than for a financial contract: certainly the lowest volume number, 1000 per year, would be more sensible than the highest, and even more so in a developing country context where the market for a particular agricultural commodity is highly likely to be a great deal smaller than in for example the United States, where this kind of success criteria was originally developed.

(iii) As Exchanges are profit-making institutions, a theoretically better criterion of success would be to analyse each contract in terms of Net Present Value (NPV), exactly like any other investment decision by a commercial organisation (Brearley et al 2014), and as has been adopted for decision-making, even in agriculture, for decades (Dalton 1967). Exchanges have only relatively recently become profit-making institutions, however, and it is extremely difficult to identify the costs specifically associated with the launch of any one contract. For example, a business development manager employed by the Exchange may be occupied with the launch of several contracts concurrently, and may well also be involved in the marketing of existing contracts. Similarly with Exchange marketing, isolating the costs specifically pertinent to the launch of one contract may be hard, if it is possible at all.

What makes for success, at least quantitatively? As noted above, despite considerable research available to market development professionals at Exchanges, consistent success has proved elusive. However the established criteria from existing research in developed economies for the success of agricultural futures contracts are the following:

- (a) The own-hedge contract should be more effective in reducing risk than the existing cross-hedge contract.
- (b) Cash prices must be variable to create hedging needs and speculative interests.
- (c) The liquidity cost of using the own futures market should not be too much higher than the liquidity cost of using the existing cross-hedge futures market.

(d) The cash market must be large enough to attract a large number of potential participants into the futures markets as either hedgers or speculators.

(e) The marketing channel must not be vertically integrated or highly concentrated. Extensive Government subsidies are another negative indicator

(f) The cash market must be active with frequent transactions.

(g) The commodities traded must be homogeneous and/or have a well-defined grading system.

Other factors mentioned have been the type of trading platform, and the relative size of exchanges (Hung et al 2010).

The results of this extensive research, and further suggested factors, are summarised in the table below:

**Table 1: Factors Contributing to the success of a futures contract**

Free Market	Perception by market participants that there is a free market with low levels of manipulation of prices by major players
Price Volatility	Volatility below Y is counter indicated (Black, 1986; Nothaft, Lekkas, & Wang, 1995; Silber, 1981, Brorsen and Fofana 2001)
Size of the Cash Market	Markets below X are not likely to succeed in supporting a futures contract (Carlton 1984, Holland & Fremault 1997)
Little Competition	Especially not a liquid futures market, even in another jurisdiction
Understanding	Sufficient knowledge of derivative trading by potential market participants
Manageable Basis Risk	Correlation of varietal prices
Contract Design	Chosen varieties, delivery points, Lot size, tick size, delivery points (Black, 1986; Duffie & Jackson, 1989; Lien & Chan, 2002; Lien & Tse, 2006; Tashjian, 1995)
Exchange policy/marketing	Pennings (1998)

**Red Chilli**

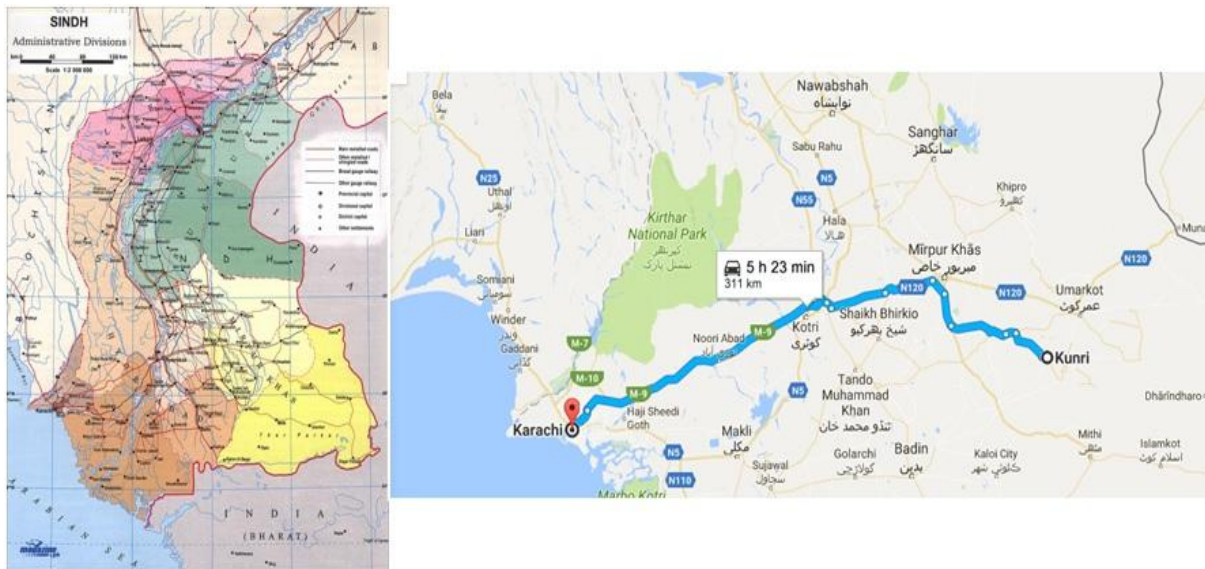
Chilli (*Capsicum annum l., Capsicum frutescense L.*), also known as red pepper, is of the genus capsicum, family solanaceae. It is believed to have been first grown in Latin America. The chilli plant is a white flowered, dark green or purple leaved plant that grows up to 1.5 meters in height. The part of the fruit that generates the pungent flavour in the fruit is its membrane and the seeds. Red Chilli, the mature plant, is grown to be dried, cooked and used as a whole as spice for foods, for sauces, vinegars, ketchups and pickles, as flakes or paste. Red chillies contain large amounts of vitamin C and small amounts of carotene (provitamin A), as well as significant quantities of magnesium, potassium, and iron. Red chillies are also used to prepare red chilli powder, which is obtained from the crushing process of dried chillies and has some unique

medicinal uses as well as being used to enhance the flavour of cooked food and beverages. The world loves chilli. Global production is around 7m MT (metric tonnes), which is cultivated on approximately 1.5 million hectares of land (FAO 2016), up from around 2.5m MT a decade ago. India, the largest producer of chillies in the world, contributes about 1-1.2m MT annually. Production in India is widely distributed across the country: Andhra contributes 49 % of total production followed by Karnataka (14%), Orissa (7%), Maharashtra (5%), West Bengal (5%), Rajasthan (5%) and Tamil Nadu (4%). Other producers are China (around 0.4m MT), Mexico (around 0.3m MT), Pakistan (around 0.2m MT), Nigeria, Peru, Bangladesh, and Hungary (FAO 2016).

Pakistan is therefore amongst the top five producers in the world. Between 2000-01 and 2009-10, the area planted to chilli in Pakistan decreased from 84.5k to 74.8k hectares, but with better production techniques output has nevertheless increased from 174.6k to 188.9k MT.

Sindh is the leading cultivating/producing chili province, cultivating annually an average area variously estimated at 40-55.3k hectares with production of somewhere between 85-122.9k MT, 85% of the country's production.

**Figure 1: Sindh province (to show distances and communication)**



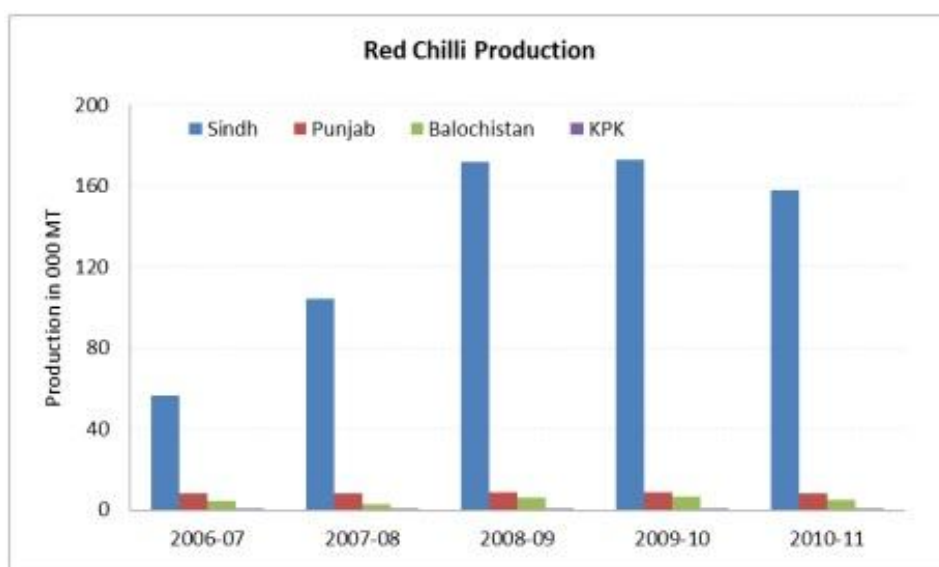
The small town of Kunri, once called the ‘Chilli Capital of Asia’ alone produces 55% of Sindh’s chilli, whilst other cultivation hubs are Mirpur Khas, Sanghar, Badin, Tando Muhammad Khan, Khairpur, Shikarpur, and Ghotki.

reliable, though it improves measurably every decade, making centralized pricing easier.

Although these towns are not enormous distances from one another – Kunri for example lies 311km/5 hours 23 minutes by road from Karachi (Google, 2016) – transport is not always quick, easy or

By comparison, Punjab produces 6.3 % (Kasur, Okara, Pakpattan, Sahiwal, Multan, Sheikhpura, Khanewal, Vehari and Bahawal Naga), Balochistan 3.4 % Killa Saifullah, Khuzdar, Loralai and Musa Khel), whilst KPK (Mohmand Agency, Bajour, Dir and Kohat) only 0.6 % of total chilli production in Pakistan.

**Figure 2 Red Chilli production in Pakistan**



Source: Pakistan Bureau of Statistics (2012)

There are more than 400 varieties of chilli available worldwide, and red chilli grown in Pakistan has many. The main varieties from Kunri are Desi, Mexi, and Nageena, while Talhari, a winter variety, is from Badin. Ghotki is from Ghotki and Khairpur and Sanam is cultivated in the outskirts of Karachi. Umerkot and Mirpurkhas districts in Mirpur Khas are the major hubs for the production of the round Dandicut (or Dundicut) variety, which is also locally called Loungi, and is mainly used for branded red chilli powder. This variety comprises 80% of total production (compared to 30-35% in India of the Sannam-S4, grown primarily in Andhra Pradesh) a useful single variety dominance when considering a futures contract that will need to be based on a particular variety. The major chunk of red chilli Dandicut variety comes from Kunri and surrounding areas and the Kunri spot market acts as benchmark for pricing. Lahore and Faisalabad are among other major markets but the red chilli being traded in these markets is mainly procured from Kunri. The trading season of the Dandicut variety starts from September/October and ends in February/March. The Hybrid varieties also grown are longer and used by local chilli powder manufacturers to sell in the open market for local consumption. The average per acre yield of the Hybrid variety is approximately twice of the Dandicut variant : its trading season starts form May and continues till August/September.

Pakistani chilli production is however subject to a number of plant diseases, most notably Phytophthora or collar rot disease, the chilli mosaic virus, anthracnose which deteriorates fruit in chillies, and aflatoxin, a post-harvest problem which affects quality. Local hybrids are not available. Drying of the chilli fruit under undesirable conditions such as damp or pests, as frequently happens, naturally tend to adversely impact the produce quality and as a consequence its marketability and sale price. Proper post-harvest handling and marketing of Sindh red chillies is therefore an obvious priority, but in the previous absence of warehousing and transparent pricing this has not happened.

The major chili exporters along with their percentage share in the world's total exports are India (25 per cent), China (24 per cent), Spain (17 per cent), Mexico (8 per cent), Pakistan (7.2 per cent), Morocco (7 per cent) and Turkey (4.5 per cent). Of Pakistani production approximately one quarter is exported, compared to around 10% in India. The top importing countries in the world are the United Arab Emirates, EU, Sri Lanka, Malaysia, Japan and Korea (FAO 2016).

In the international market, prices of both whole and chili powder vary depending on the cleanliness, pungency, colour, and appearance of the product.

Generally 0.7 per cent capsaicin is the minimum level for the extraction market. Product with more than 1% capsaicin fetches a premium in the international market, but across the range of exports, Pakistani red chillies fetch lower prices than Indian varieties, mainly due to the quality problems noted above.

The history of derivative trading in red chilli is not especially long, but it has been a solid producer where it has been successful. The first Exchange to launch a contract was the Indian National Commodity and Derivative Exchange (NCDEX), where trading in chilli futures commenced on March 11, 2005. NCDEX traded a very respectable 14,450 contracts in 2015 – so a success by most quantitative criteria – up from 4,636 contracts in 2014. The Multi-Commodity Exchange of India (MCX) red chilli contract was launched as a purely competitive product, in 2004 and traded 2290 lots that year, 4730 in 2005, 27,082 in 2006 and 18,614 lots in 2007. Trade collapsed in 2008, however, and the last traded month was June 2009.

The third chilli contract was launched in Pakistan. The Securities and Exchange Commission of Pakistan (SECP) approved the launch of Red Chilli futures contracts on PMEX in July 2015; the Exchange launched the contract on September 1<sup>st</sup>, 2015.

### **Why did PMEX launch red chilli?**

Using the same success criteria for agricultural as for financial futures contracts may be a fundamentally flawed process. Exchanges do not necessarily seek the same return on expenditure for agricultural contracts. For example, there were other, institutional, reasons why PMEX launched the red chilli contract. Although its original mandate was agricultural derivatives, its success since launch has rested largely on new financial derivatives. Whilst PMEX management welcomed the success of these financial derivatives, it was conscious of its original mandate and keen to demonstrate to regulators, politicians and donors alike that it had lost none of its original abilities and enthusiasm for agricultural commodities. For this reason, looking strictly to commercial criteria to analyse the logic – or the success – of the PMEX red chilli contract is not entirely the right frame of reference.

The fact that PMEX did not conduct the kind of analysis that would be indicated from previous research, such as evaluation of spot market volatility, or a direct comparison with the NCDEX contract, provides further evidence for this contention.

In January 2015, PMEX along with the Pakistan Agriculture Coalition (PAC) started research on

Red Chilli for it to be listed on the PMEX trading platform. They met with farmers, spice traders, industry brokers and corporate buyers in Kunri and Karachi to obtain their feedback on Red Chilli trading (PMEX 2015). During this process, they identified the following issues which were being faced by the Red Chilli farmers and the value chain:

1. No Price Premium is available for Quality Produce

The quality specifications of the produce is determined traditionally through visual expertise that certain people have developed over the years. Therefore, higher quality product is denied the price premium that it can fetch resulting in the farmers being indifferent to putting in effort to produce higher quality crop.

2. Delay in Payments

The traditional mandi system unduly favours the buyers as payments to the farmers are delayed at times for up to months. This deprives the farmers of their due payments and investment into their business.

3. Undue Deductions at the Kunri Mandi

Since the mandi is operated by brokers who look at their best interest, the farmers face heavy deductions from their due share based on, bag weight discounts, both commissions in the vicinity of 4-5% and pilferage during re-packaging amongst others, making the overall deductions above 10%.

4. Lack of Awareness about Quality

Farmers are not aware how they can improve the quality of their crop even with minimal efforts.

5. Absence of Quality Seeds

Good quality seeds are not available, especially for the Dandicut variety.

PMEX Analysis

Previous research has focused on comparing different commodities. The failure of the MCX contract, is relatively easy to explain: there already was a functioning futures contract at NCDEX. The following points of comparison relevant to the success of a contract may be noted:

*Free Market.* The trading at PMEX is aimed at making the price discovery of red chillies transparent and efficient. It is also intended help farmers to get better price of their produce and will similarly help processors and exporters to procure better quality in an efficient, convenient and transparent manner. PMEX readily concedes that the traditional red chilli trading market that is burdened with middlemen and profiteers. Currently farmers face a lot of issues in selling their produce and getting a better price. They are generally forced to sell their production at the Kunri Mandi to big traders as they have no linkages or information about the other buyers spread over all the country.

**Figure 3 The Value Chain in Pakistani Red Chilli**

Grower's Cost	61 %
Grower's Profit	15 %
Commission Agent Profit	08 %
Commission Agent Cost	02 %
Wholesaler Profit	13 %
Wholesaler cost	01 %
<b>Total Price</b>	<b>100</b>

Source: Pakistan Agriculture Coalition (2014)

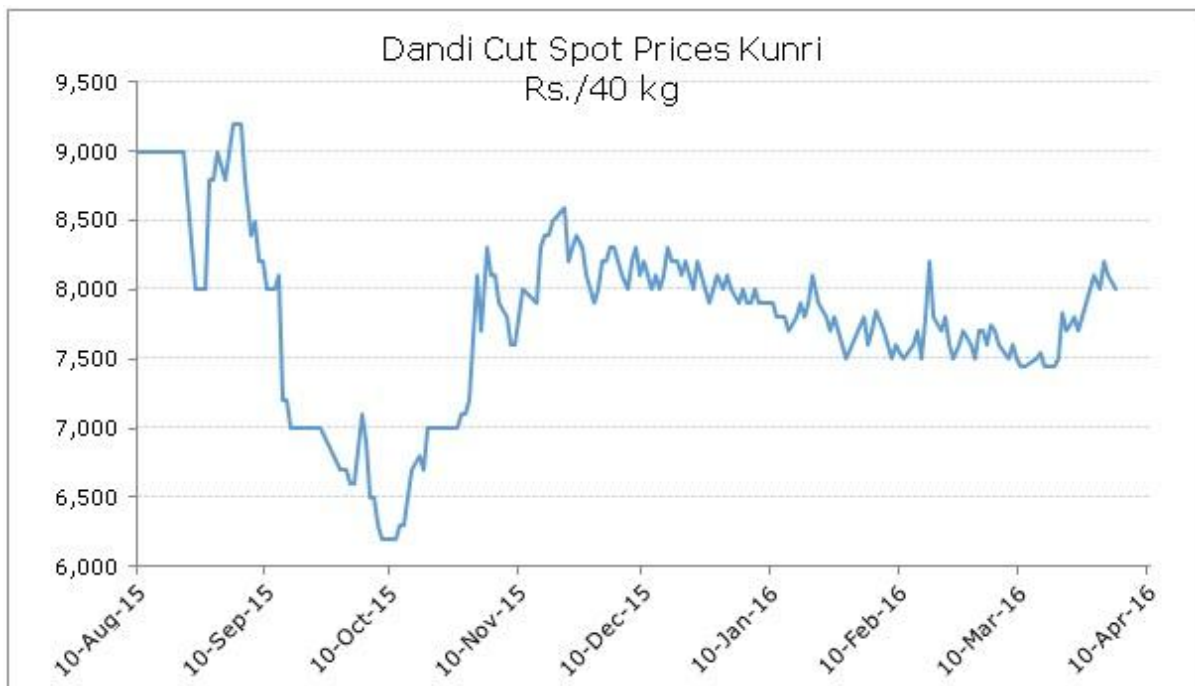
*Price volatility.* Chillies are produced seasonally but consumed throughout the year. Prices vary seasonally depending on overall production, export demand, and stock available in warehouses. External market events have definitely produced rapid price changes. For example, the price of a 40kg bag of red chilli on the spot market has risen from Rs. 4400 to Rs. 5400 when the Indian red chilli crop failed to produce enough chilli to meet export orders<sup>1</sup>.

According to the MCX Feasibility Study, in India, red chilli has well established spot markets. Guntur, Warangal, Khammam in Andhra Pradesh; Raichur, Bellary in Karnataka are the major spot markets at the production centres. The trade channel involves several types of participants: village level traders, commission agents, wholesalers, retailers, agents for exporters and exporters themselves. The

commodity changes hands several times before it is processed, exposing all participants in the value chain to price risk. Most importantly, chilli ‘displays high volatility, with the prices heavily dependent on season, production in different producing tracts spread across the country, demand from exporters and the stock available at the cold storages’ (MCX 2007).

In Pakistan, prices have demonstrated similar volatility. Red chilli is produced in the months from September till end of December, so at the beginning of the crop year supply remains high and gradually slows down. This explains at least in part the oscillation of price, so although there is volatility, an open question is whether there is sufficient unpredictable volatility in the red chilli price<sup>2</sup>.

**Figure 4: Red Chilli Prices at Kunri Market - Rs./Maund**



Source: PMEX

*Size of the cash market.* In terms of success criteria, Pakistani chilli production is 18% of that of India and the market size is about Rs.25 billion (PMEX 2015). This large size of the market makes the market very liquid.. Although it has been demonstrated that the Indian market is sufficiently large to support an active derivatives market, there is little doubt that had it been 1/5 of the size, NCDEX would have hesitated, at least, before launching a contract. The smaller size of the Pakistani market must remain a source of doubt about the success of the PMEX market, or at least

raise a need for the Exchange to counteract this with a smaller contract size.

*Little competition.* The PMEX contract should succeed according to this criterion: there is no other derivative market in chilli in Pakistan – nor is there likely to be – and for reasons discussed below the NCDEX market is not an alternative for Pakistani producers and traders.

*Understanding.* PMEX worked on bringing together prominent stakeholders such as the Red Chilli Grower Association, Kunri, Red Chillies Association, Sindh and significant food processing

companies in the consultation process for launch of the contract, to ensure its acceptability by the market participants. PMEX also worked with relevant stakeholders including growers, traders, corporate buyers, and banks, and brought a coalition of partners to bear for the contract: Agility Pakistan (Pvt.) Limited is providing the warehousing and logistic support for the contract whilst SGS Pakistan (Pvt.) issues the quality certificates, and the Pakistan Agricultural Coalition, an NGO, acted as a focal point to bring all stakeholders on board. Whilst the long-term success of this endeavour is not yet known, the extended length of the consultation process and the stated willingness of spot market participants to engage with the market is a good indicator of likely future contract success. If PMEX fails it will not be through lack of understanding of the market nor because it did not consult with the trade.

*Manageable Basis Risk.* Basis risk is the risk that the market participant will hold a physical commodity with a different price trajectory to that quoted on the derivative market. Basis risk can be caused by quality differences causing price differences, or by different physical locations – a market squeeze can be formed by transport difficulties. PMEX analysis showed that red chilli prices in Pakistan were not unduly influenced by location.

In terms of varieties, in Pakistan Loungi is grown in Mirpurkhas, Nawabshah, Sanghar and Tharparkar districts. This variety is familiar with growers because they get higher prices. However this hardly differs from the position outlined by MCX in its Feasibility Study in 2007: There are several grades and varieties of chillies grown across India. However, Sannam S4 grown primarily in Andhra Pradesh accounts for around 30-35% of the total production. This is also the main variety that is exporting. If this single variety is offered for futures trading, it will be possible to offer a relatively homogenous product for futures trading. The prices of the major chilli varieties sold in the country are correlated with each other. As a result, the players in other varieties can also hedge their risks through this single variety.

*Contract Design.* Based on the insights from literature/standard practices, it can be deduced that it is very important to design the contract correctly across all its specifications, so for example ensuring that the trade finds the size of the contract acceptable, ensuring that it is not possible to predict price changes in advance (e.g. from tracking an index) or that an existing alternative contract serves the market better.

The table below shows a comparison of contract specifications between MCX (failed), NCDEX (succeeded) and PMEX (launched).

**Table 2: Contract Specifications for red chilli compared**

	<b>MCX</b>	<b>NCDEX</b>	<b>PMEX</b>
<b>Contract Size</b>	2.5MT	5MT	1MT
<b>Variety</b>	LC 273	Chilli Teja Guntur	Maxi – Commonly known as Dandi Cut: A+
<b>Price Quotation</b>	Rupees per 100 kg ex-Guntur (Inclusive of all taxes including Sales Tax or VAT as the case may be, levies, market cess and packing charges) Bilty Rate	Rupees per 100kg, basis Chilli traded as Teja delivery to the NCDEX approved warehouse Guntur, exclusive of Sales Tax/VAT	Rupees per Maund (Where 1 Maund =40 Kg), Ex Kunri excluding all taxes
<b>Traded Months</b>	12 contracts per year	As specified by the Exchange from time to time	A maximum of 5 contracts may be made available for trading.
<b>Tick Size (minimum price movement)</b>	Rs. 1	Rs 2	Rs. 10 per Maund or as specified by the Exchange from time to time through a circular
<b>Initial Margin</b>	5%	5%	?
<b>Delivery Position Limit</b>	Compulsory For individual clients: 1500 MT For a member collectively for all clients: 4500 MT or 15% of the market-wide open position, whichever is higher. Near Month Limits For individual clients: 500 MT For a member collectively for all clients: 1500 MT or 15% of the market-wide open position, whichever is higher	Optional Member-wise: 25,000 MT or 15% of market wide open interest in the commodity, whichever is higher Client-wise: 2,500 MT.	Compulsory Greater of 10% of Open Interest and 1,000 Contracts per Broker, gross across all clients and across all maturities. Greater of 5% of Open Interest and 250 Contracts per Client, gross across all maturities.
<b>Delivery Centres</b>	All approved warehouses / cold storages within 30 km radius of Guntur or any other centre as may be approved by MCX	Guntur (up to the radius of 50 Kms from the municipal limits), and Khammam (up to the radius of 50 Kms from the municipal limits) With a premium/discount as notified by the Exchange from time to time.	At Exchange approved and designated warehouse in Kunri or as communicated by the Exchange through circular
<b>Daily Price Limit</b>	2%	2%, 15 min delay, then a further 2%	+/- 20%, or as specified by the Exchange through a circular
<b>Delivery Unit</b>	2.5 MT with +/- tolerance limit of 125 kg (which means that if the seller delivers any quantity between 2.375 MT to 2.625 MT, it will be construed as adequate to discharge of his delivery obligation of 2.5 MT, though he will get the value only for actually quantity delivered by him	Lots of 5 MT net or multiples thereof. A quantity variation of +/- 2% is permitted as per contract specification	As per contract specifications



The contract specifications of the PMEX chilli contract are more suitable for Pakistan for six main reasons:

- i. It is referenced to a 'captive market': Pakistani chilli producers and merchants will not use the NCDEX contract because of currency risk and their difficulty in establishing trading accounts with Indian brokers. Pakistani chilli prices exhibit relatively low correlation with Indian chilli prices.
- ii. Contract specifications and trading arrangements are closely matched to Pakistani conditions.
- iii. All open positions on PMEX chilli are marked to market using daily/final settlement prices, determined by the Exchange either as the average of best bid and offer at closing time, the last traded price or the value weighted average price.
- iv. The contract size at one-fifth of NCDEX is more suitable for the Pakistan market. According to PMEX, physical chilli trades are smaller in Pakistan and the average size of a trading company, broker or farmer's land is also smaller. Evidence suggests that a smaller contract size helps traded volumes (Hung et al 2011:457) although the Exchange must strike a fine balance – too small and the trade will complain at the level of fees.
- v. The PMEX contract is for the time being spot trading, with all trades at the exchange so far converted into physical trade. Market participants requested that this was the initial structure of the market: the futures aspect is therefore short-dated, to replicate spot trading. PMEX will consider the listing of long dated futures contract at a later stage.
- vi. The NCDEX delivery option is to Indian warehouses, and therefore unsuitable for the Pakistan market: although there is an option to close out the contract before delivery, Pakistani traders have told PMEX they prefer compulsory delivery, at least initially. The PMEX Red Chilli futures contract specifications require this, as well as quality certification of red chillies and availability of multiple grades of red chillies for trading, although as yet (early 2016) only A+ and A have traded, not B.

*Exchange policy/marketing.* PMEX put all the usual arguments about the benefit of a futures market in red chilli into its market analysis. The Exchange built what it describes as a transparent, efficient and convenient electronic trading platform for trading of Red Chilli, which provides payment

within 48 hours, not the weeks or even months hitherto common – a transparent pricing mechanism with efficient price discovery, a low transaction cost by comparison to the traditional Mandi market (10% plus at mandi vs. only 3% at PMEX), quality grading of produce at the farm gate, the ability to reach more buyers through electronic trading available across Pakistan, extension services to help grow high-quality produce, and real-time information of product prices at the Exchange to help farmers better price their produce.

*Warehousing and warehouse receipts.* Agility and PMEX surveyed the Kunri area to acquire a warehouse for this project and selected a warehouse in the vicinity of other warehouses with a capacity of 200 tons being operated by a local farmer, which was modified for Red Chilli storage (e.g. the installation of ventilation fans, a raised platform with wooden pallets and lockable main door to protect the stored produce). PMEX further argued that if the contract were successful, it would encourage the development of much needed infrastructure of warehousing and quality certification, which in turn would enable farmers to store their product and trade at an optimal time. Due to space constraints the current setup does not allow farmers to hold the crop at the warehouse for over 24 hours or obtain financing against the warehouse receipt. Accordingly, there is a need to acquire additional storage space to provide the farmers an opportunity to either sell their produce at the current market rate, store their produce if the price is not favourable and get a warehouse receipt issued, get the warehouse receipt financed by banks or trade the receipt at the secondary trading market place (the PMEX trading platform), and finally then to be able to sell their produce at a future price to settle the price difference upon maturity. However, PMEX recognises that the establishment of such warehouses is capital intensive and requires a detailed feasibility analysis: no commercial organisation yet regards their construction as commercially viable as transaction volumes remain low: a vicious circle that PMEX wants its contract to help break, as the PMEX contract can also potentially assist the process of expanding bank lending to chilli growers using warehouse receipts. PMEX stressed that NCDEX reported almost exactly the same conditions in India prior to the launch of their chilli contract. PMEX has therefore placed the contract on its electronic trading platform which makes it accessible for Pakistani market participants.

## **Conclusions**

Launching a new futures contract is never an easy process, and never guaranteed to succeed. It should be recognised, however, that as with many other

commercial organisations, but especially because of the sensitivity of agricultural markets, Exchanges are subject to both internal and external political pressures, so purely commercial criteria of success, especially traded volumes, may not be entirely appropriate to judge the success of an agricultural futures contract. That said, it is important for the success of contracts that Exchanges do not pursue their own agenda rather than that of the market they are supposed to serve, and focus as far as their stakeholders will allow on what contracts the market wants and needs.

Given the size of the Pakistani chilli market and the smaller lot size of the PMEX contract, volumes in excess of the 'success' criterion of 1000 lots annually seem reasonable to predict. The initial results are promising. Even before launch, more than six dozen farmers and several corporate buyers had been registered on the PMEX platform. In the first year, the contract attracted a broker,

### Acknowledgments

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<sup>1</sup> See [http://www.app.com.pk/en/\\_index.php?option=com\\_content&task=view&id=32021](http://www.app.com.pk/en/_index.php?option=com_content&task=view&id=32021) for this information

<sup>2</sup> I am indebted to my colleagues at UWA during the internal seminar where this paper was first presented for raising this important point

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over a dozen farmers with landholdings of between 30-500 acres, and a handful of buyers, including some major corporates which is encouraging. The traded volume between October 2015 and February 2016 was 605 MT, a value of Rs. 124m, by comparison to 570 MT and Rs. 102m at NCDEX over the same period – an initial result with which PMEX is reasonably satisfied. According to PMEX's own data on expenditure and returns, and using a discount rate of 15%, which is an approximately accurate estimate of PMEX's cost of capital, and given a 10% annual increase in traded volumes, this would produce a positive Net Present Value in 6-7 years, which is an acceptable timeframe for an Exchange. Even the moderate success that may satisfy stakeholders will depend, however, on continued price volatility, and the willingness of speculators to participate in a relatively small, closed market.

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