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TRADING FUTURES CONTRACTS IN A DEVELOPING COUNTRY: THE ECONOMIC HISTORY OF BRAZIL'S BMSP

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Abstract: Most mature economies, like the United States, evolved from the trading of forward contracts to the trading of derivatives contracts. Developing countries, like Brazil, are jumping from cash markets to futures markets in commodities, without first developing forward markets. Is this an anomalism? This article uses the economic history approach and methods to analyze the development of a futures contract for cotton by the São Paulo

Commodities Exchange. The main conclusion is that in a developing country, in addition to all relevant factors applying to advanced countries, it is necessary to organize the production chain of the business, and engage efforts in the areas of learning, innovation, technology and institutional development.

1 – GENERAL OBJECTIVES

The derivatives markets (forward, futures, option and swaps) are gaining a growing importance in the Brazilian economy, repeating a phenomenon which happened in some of the most important market economies of the world. A commodities exchange dealing with a whole set of financial instruments – that is, going beyond the spot and physical markets and becoming apt for trading derivatives - may be regarded as an organization based in management models and norms of conduct and performance, which offers services for trading, hedging and price discovery.

The São Paulo Commodities Exchange (BMSP) was the pioneer derivatives exchange of Brazil. It constitutes a fascinating case study, since the exchange was very important in the cotton business and in the trading of agricultural commodities. Brazil today is one of the top three world producers and exporters of the most important agricultural commodities, and doubtless the commodities and futures exchanges have played a role in this process.

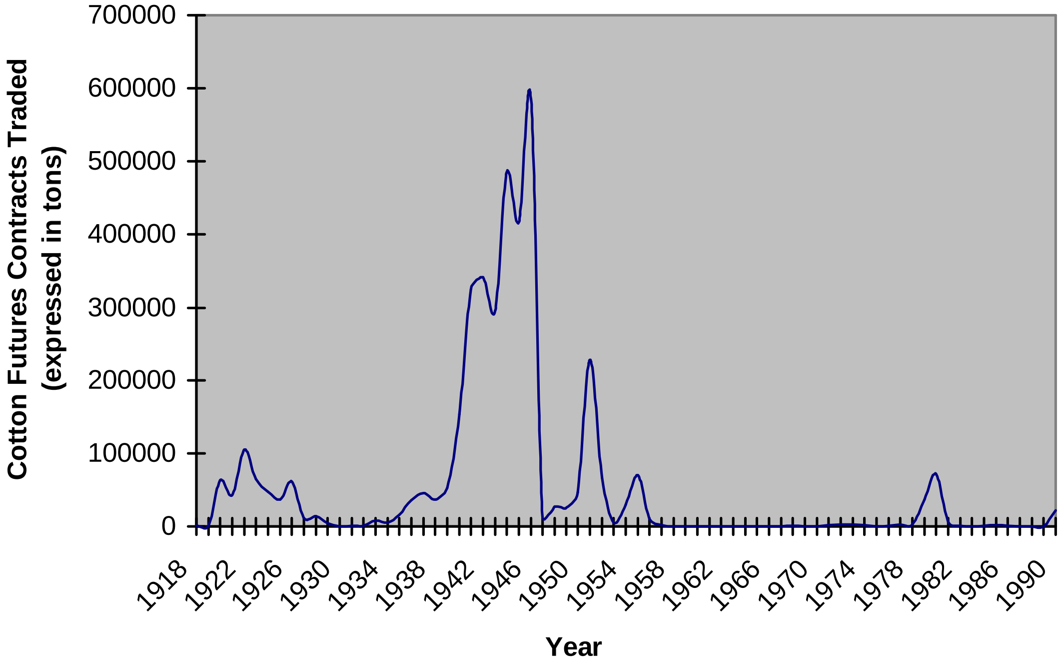
During 75 years, from 1917 to 1991, BMSP traded contracts in several agricultural commodities, and, during its last years, also in financial instruments. Nevertheless, BMSP, during its existence, played a more significant role in the negotiation of cotton market instruments (spot, forward and futures), with spillovers in several aspects of the production and commercialization of cotton. This paper will focus on the trading of cotton contracts, and the efforts made by BMSP to organize the cotton market in order to create the conditions for demand and supply of cotton futures contracts.

During its entire existence, the number of contracts (spot, forward and future) traded in BMSP showed violent fluctuations, in some years almost without trading, and in others sometimes would trade in the exchange eight times the size of the cotton crop. In general, BMSP showed, during the 74 years of its existence, an initial period of growth, followed by two booming decades in the 1930s and 1940s, and a downward trend after that, with very irregular years of trading performance. Figure 1 presents the evolution of the futures contract traded in BMSP, measured by the amount of cotton transacted referred by the contract.

The period 1930-1950 therefore marked the golden age of BMSP, in which the main objective of BMSP was to develop trading in a cotton market, since by that time Brazil already had an important textile sector, and was also engaged in cotton exports.

Launching new contracts for trading in the futures markets is an expensive and risky business. The literature about the derivative markets has discussed this topic almost entirely from a financial view point. This article innovates, and uses the economic history approach and methods to analyze the development of a futures contract for cotton by the São Paulo Commodities Exchange.

Figure 1 - Development of the Cotton (plume) Future Market (1918-1990)



The main conclusion is that in a developing country, in addition to all relevant factors applying to advanced countries, it is necessary, in order to launch a new futures contract, to organize some of the downstream segments of the production chain of the business. Before the contract is offered to the market, it is needed "to create the market". In other words, the exchanges in developing countries have to offer services and organize sections of the production chain of the commodity; otherwise the contract will not attract liquidity. In order to make viable the trading of cotton contracts, BMSP had to engage itself in the areas of learning, innovation, technology and institutional development.

Of course, as shown by the history of BMSP, this action may be a necessary condition, but not a sufficient condition for the continuous negotiation of the contract in the long term. In the 1950s the government promoted several economic policies (like price support) and also promoted changes in taxation, and the cotton futures market lost considerable ground.

Interestingly, however, in spite of the economic importance of these institutions there are almost no published studies about the economic history of the derivatives markets. There are also no published studies purposed to be useful for the development of the derivatives markets that use the concepts and tools of economic history. The present paper is an effort in that direction. The BMSP economic history can be useful for two additional objectives. First, as a general view of the role of institutions in economic growth, in particular what is called in this literature as diffusion of knowledge, spillover effects and strengthening of a production chain. Second, as a case study of a financial institution from a developing country attempting to replicate – and having to adapt it to local circumstances - an organizational model designed for a developed country.

2 - BRAZILIAN ECONOMY, FINANCIAL DEVELOPMENT AND COTTON PRODUCTION

Brazilian economy

During the Portuguese Colonial period (1500-1822) and after Independence till the end of First World War (1822-1918), Brazil was a country specialized in commodities. Beginning with "Pau Brasil" hard wood, and moving to sugar cane, gold, diamonds, rubber, coffee and other agricultural or mineral commodities, what is today Brazil had a presence in the international commodities market since the arrival of the Portuguese.

During the 19th century coffee was by far the major crop production and source of revenue for the country. There was a fortunate – and rare – conjunction of a rising world demand, availability of suitable lands and adequate supply of labor and therefore a rising domestic supply of coffee, and an upward trend of coffee prices in real terms in the international coffee market.

With a growing population, an increase of GDP, the occupation of virgin lands further away from the coast and European immigration (in addition to Portuguese, there was a considerable influx of Germans, Italians, Spaniards and Japanese immigrants), by the end of the 19th century economic forces created the conditions for industrialization. Cotton production and manufacturing would play an important role in the new stage of Brazilian economic growth.

Financial development in Brazil

Brazil was part of the British economic area of influence during the 18th and 19th century, till First World War. Therefore, the financial development of the country followed basically the same patterns and progresses as in other parts of the world under the influence of Free Trade and the gold standard.

This financial support was more for international trade related activities. The financing of exports and imports, management of external debt, capital inflows and outflows, and exchange rate transactions, required – and received – specialized support from institutions in Great Britain and other European countries.

With the beginning of the industrialization, and with the increasing economic importance of the domestic market, there was a demand for domestic financial and capital markets. This market segment would be attended basically by Brazilian domestic institutions. The first Brazilian commercial banks were created in the second half of the 19th century, and the coffee plantation economy began to stimulate and demand specialized financial institutions and instruments. The first stock exchange was created in Rio de Janeiro in 1850, and other exchanges followed. There was a boom in capital markets activities for raising capital to infrastructure projects of railroads, street cars, ports, electricity, sugar factories, and textiles. Some of the public offerings of company shares were made simultaneously in the Rio and the London stock exchanges. On balance, it is reasonable to argue that the domestic financial sector, if not ahead of demand by the real economy, also was not lagging in the supply of institutions and instruments adequate for the changing Brazilian economy.

One aspect that is worth mentioning, since it is an important feature even today in Brazil's financial development, is that the country followed with attention the financial modernization taking place in Europe and the United States, and tried to emulate and adapt – with a time lag as short as possible – the financial innovations taking place in these more advanced countries. The creation of a specialized exchange for price hedging in agricultural commodities would fit in this scenario.

Cotton economy

The state of São Paulo was at the beginning of the 20th century – and still is today – the most important economic region of the country. It was the major coffee producer in the world. After the turning of the century, however, the coffee economy was showing signs of overproduction and market stagnation. The coffee economy had been in a crisis since 1909, and coffee planters used their political leverage to receive price support. As a result, coffee stocks had to be purchased and stored by the government, and paid by the issue of new currency. There was a concern in the state of São Paulo that with a trend of rising production much above international demand, coffee prices and income would go down. The 1929 Crisis hit heavily the Brazilian coffee economy.

Meanwhile, at the end of World War I, the cotton supply was growing. Cotton culture was replacing decaying coffee plantations in several areas of the state of São Paulo. In 1923, São Paulo already accounted for near a quarter of the Brazilian cotton production. This process of agricultural diversification away from coffee, however, was prematurely abandoned due to coffee prices recovery in the 1920s. It would return, with strength, only in the mid 1930s.

During the period 1880-1930 the industrialization of Brazil was based in non-durable consumer goods, with special importance of textile goods. There had been already an inflow of capital investment in the industry originated in coffee plantations. By 1920, 31 percent of the Brazilian manufacturing sector was located in São Paulo, with special prominence to textile companies. From then on, São Paulo would consolidate its position as the nation's economic powerhouse. The 1930s and 40s, therefore, were the golden decades of the cotton agribusiness in the State of São Paulo.

3 - THE BOLSA DE MERCADORIAS DE SÃO PAULO (BMSP) AND COTTON TRADING

History of the BMSP

BMSP (Bolsa de Mercadorias de São Paulo) was the first modern commodity exchange in Brazil. It was founded in 1917, and closed in 1991, when it was acquired and merged with the BM&F (Commodities and Futures Exchange). BM&F celebrated 20 years of activity on January 31, 2006. Today is the fifth largest commodity and future exchange in the world (notional value of all trading of BM&F in 2005 was US$ 7 trillion). BM&F trades 22 contracts of commodities (including alcohol, coffee, corn, cotton, sugar, feeder and live cattle, soybeans, rice and gold) and 27 contracts of financial derivatives(including index, interest rates, currencies/exchange rates, sovereign debt instruments, OTC swaps and OTC flexible options). In opposition to the image usually associated with exchanges – that they are strongly linked and inspired by financial markets and speculative activities – the BMSP had its origins and history strong linked with the process of industrialization and development of a commercial agriculture in São Paulo. Only during its final years of existence, when BMSP was competing with BM&F before its acquisition, the exchange increased its links with the financial market.

The BMSP was founded in October 26, 1917 and the by-laws approved in November 8 of the same year. The effective functioning began in March of 1918, and the trade pits started to operate in August of 1919. Among its 259 founders were very important owners and executives of industrial, agriculture, commerce and banking companies.

In its original by-laws, BMSP established that it would be formed by commercial firms with the following objectives:

a) to promote commerce and the development of food production in the country, as well as other agricultural products;
b) to organize the classification of the products, and promote the service in the entire state, using associations and collaborative firms, and mail;
c) to maintain a specialized building for the exchange, with suitable space and equipments, to foster trade;
d) to regulate the conditions and instruments for buying and selling commodities in the exchange;
e) to act as an arbitrage court to settle trade disputes;
f) to represent the commodities sector when dealing with the government authorities;
g) to organize and publish statistics about the commodities traded in the exchange;
h) to organize and regulate the commodity brokerage houses;
i) to create a laboratory for chemistry and exams to attest the quality of the commodities traded in the exchange;
j) to establish a special registration for all contracts to buy and sell commodities, regarding type, quality and samples.

As a result of its linkages with production, the BMSP founders saw the exchange not as an end in itself, but as a conduit and tool to expand the whole market. Therefore, since its beginning BMSP was concerned with the creation of incentives for the production and commerce of products in Brazil, and in establishing standards for classification of products (with emphasis in cotton), as well as to make possible the attraction of investors with capital to use in the futures markets in order to have both sides (buyers and sellers) in the market and allow price hedging, and, finally, with establishing an Arbitral Court to settle disputes among members, or among members and third parties.

Cotton Trading

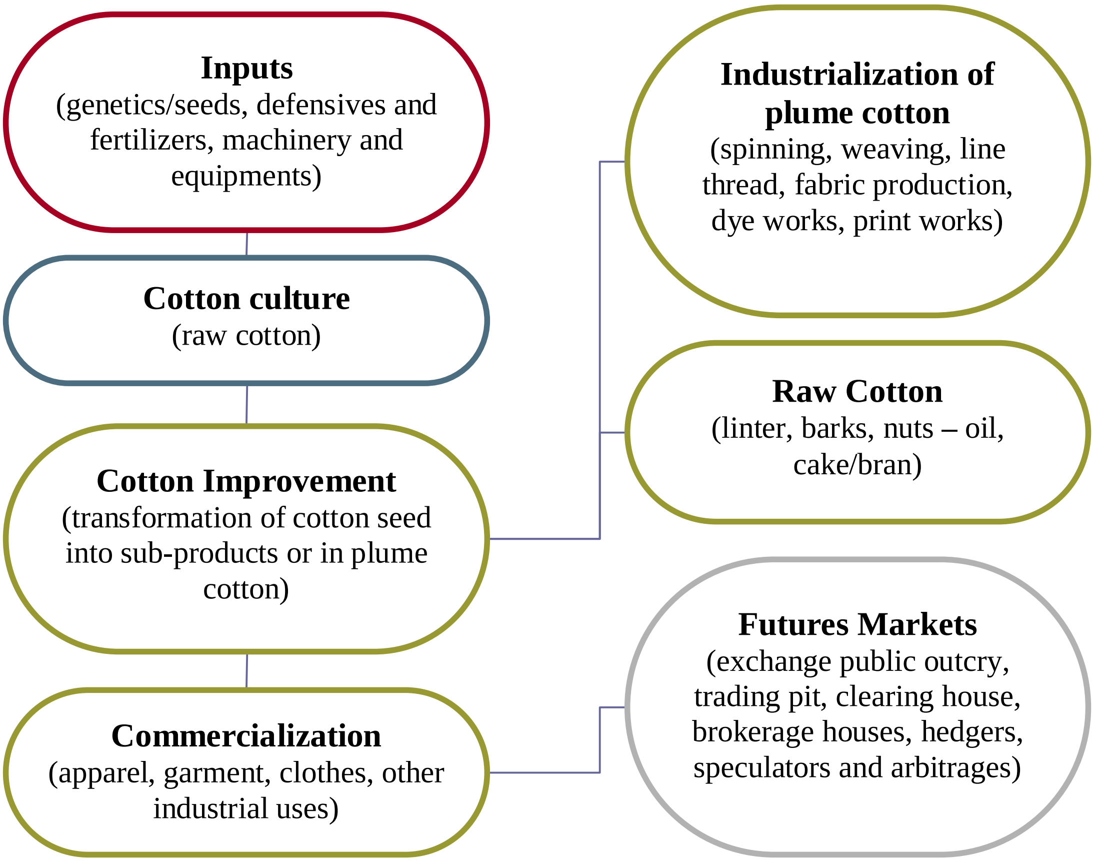


Figure 2 – The Cotton Agribusiness

Cotton trading is part of a set of economic activities centered in the production of raw cotton, which is called the production chain of cotton, or the cotton agribusiness, as shown in Figure 2. The initial industrialization of São Paulo was based in the production of non-durable consumer goods, with a significant participation of the textile production. This industrial process posed more stringent technological and economic-financial requirements for the purchase of cotton, the most important input. For both requirements the BMSP could play an important role.

The cotton spinning and weaving industry is highly sensitive to the quality and homogeneity of the type of cotton used as input, and, in addition to this technological factor, there is also the need for a steady and standardized supply of cotton during all months of the year.

The industry, in general, does not evaluate and inspect the universe of the cotton input to be employed in the factories. They use samples, together with the credibility of a system of classification based on quality categories. It also depends on the existence of formal procedures and courts to settle in a fast and cheap way any disagreements, and to get marginal price adjustments in order to align the price to be paid to the market value of the quality grade of the cotton bought.

BMSP created the classification system already in 1918, and later on expanded the system and increase training and educational activities for specialized labor in cotton classification. It opened a specialized school for this purpose. In the following decades, BMSP would become more active in the research of new cotton seeds, their dissemination among cotton planters (at that time, running small family farms), the search for types of cotton more appropriate for the consumer demand and productive capacity installed, and the support for several agricultural centers.

In addition, BMSP was very active in the promotion and marketing of cotton trade, and innovative in developing communication with the public, and even organized a special radio program using the commercial radio network. The “Exchange Hour” was aired by the Excelsior Radio Station in a daily basis, and the program was produced by a specific department of BMSP – the “Radio Department”. The structure of promotion, in 1937, already had the following sectors and departments, in addition to the ones specifically dealing with clearing and trading activities:

a) the Museum, with permanent exhibit samples of different types of cotton produced in São Paulo;
b) school of cotton classification, established in 1922, from which 40 or more specialists would graduate every year;
c) laboratory and classification sectors, which would examine and certify the bales of the São Paulo cotton crop, in accordance with international quality and regulatory standards;
d) standardization sector, with the task of defining and organizing samples of the diverse commodities, including cotton, negotiated in the trading floor;
e) cotton statistics department, which collected, classified and filed all the data about cotton production, price and trading;
f) agricultural department, which supplied technical information to the producers and disseminate knowledge among them of new seed varieties, and even encouraged them for using new planting technologies;

4 – THE NATURE OF DERIVATIVES MARKETS AND THE ROLE OF THE EXCHANGE

BMSP, as an active exchange, played a role similar to other exchanges in the world in the trading operations. The difference, as will be shown later, was in the extended services offered in order to have liquidity in the contracts negotiated in the open outcry.

The origin of modern exchanges lies in the volatility of market prices, the expectation by market participants of potential gains or losses resulting from the volatility, and hedging and speculative moves.Why there is volatility? The reason is that prices are determined by forces of supply and demand, and these forces are always changing. For instance, the cotton market chain (agribusiness) in Brazil suffered substantial impacts in the period 1917-91, caused by changes in exchange rates, taxes, government policies for cotton, technology of textile production, credit conditions for financing imports and exports, trends in the demand for textile fabrics, industrial organization, concentration of cotton manufacturers, and so on.

The important consideration is that the volatility is not caused by the derivatives markets. On the contrary, they can be an important tool to insure and manage the risk of price volatility.

The derivatives exchanges usually play the following roles:

a) transfer or manage the price risk of cotton;
b) find and discover prices of cotton in the months ahead, as a result of transparence in the way buyers and sellers compete for better prices;
c) attract significant amount of capital outside the production chain of cotton, seeking for profits and willing to take risks. This attraction makes possible to harmonize and fill gaps in the financial amounts brought by market players for hedging from the buyers side and from the seller side;
d) provide low transactions costs and facilities for entry and exit from the market, and create liquidity;
e) show better disclosure about futures prices of commodities, disseminating information;
f) allow better strategic planning by producers and buyers of cotton, due to the use of hedging operations;
g) attract competitive forces in the cotton production chain, and have considerable numbers of cotton producers and consumers doing operations in the market;

The main players and aspects of trading in cotton futures are the following:

a) Hedgers: hedging operations are made by market participants. For instances, cotton producers and importers are afraid that prices may fall in the future, and usually they sell, or are “short” in the futures markets. Cotton textile producers and exporters, on the other hand, are afraid that prices may go up in the future, and usually they buy, or are “long” in the futures markets;
b) Speculators: either they are “implicit” speculators, like the market participants not doing – or doing only a partial hedging. But, in general, speculators are investors, bringing capital from outside the sector, that bet on future price behavior, and act as counterparts of hedgers, assuming risks;
c) Basis: difference in prices that are pertinent to hedgers in a certain location, and the price set by the market. This difference, caused mainly by transportation costs and differences in the quality of cotton, create the basis risk;

d) Arbitrage: operations of buying and selling in the spot, forward and futures markets, that result in more efficiency in the market price/risk structure;

e) Price discovery: the social benefit of the future market, giving information for the development and regulation of the cotton industrial chain performance;

The economic history of commodities exchanges in countries like United States, Japan and Holland shows that there is a long time span in the institutional process of derivatives market creation. There is a long time interval between the beginning of the spot market, which in general is followed by the development of a forward market, and ends up by the creation of a futures (and options) market. In these countries, the long institutional process of the consolidation of the exchanges was done in tandem with the development of other chain links of the agribusiness object of futures operations.

Developing countries like Brazil observe the institutions of developed countries, and try to emulate and introduce similar entities in their domestic economy. They attempt to do it in a much shorter time interval. There are advantages in being latecomers, but there are also problems related to the "burning" of stages in the process. In the case of BMSP, the problems perceived were in the areas of learning, training of specialized labor, and cotton production.

4 – MOVING FROM FORWARD TO FUTURES CONTRACTS

Trading began as part of the development of civilization. Most modern practices of trade were developed in Europe from the eleventh to fourteenth centuries. The first move from cash to forward markets appeared with the trading of *letters de faire* in Europe, initially between first buyer and seller. Later on, it evolved in titles traded in forward markets among third parties before delivery occurred.

Modern futures trading started in Chicago through organized exchanges, at the Chicago Board of Trade, after the Civil War. Its market foundations, however, started much before, with the trading of grain contracts. These contracts had forward commitments calling for deferred delivery, and specifying a standard quality commodity at an agreed price to be paid on delivery. Although contributing to reduce risks of pricing and financing, they had several risks related to transaction costs.

The principal transactions costs were the counter part risk about delivery and payments, and in addition the difficulties of barter related to contract size, maturity date, quality specification and delivery places.

The system of forward contracts continued to develop and evolve, and gradually transformed into futures contracts, in a process that lasted about fifty years. In order to make them distinct from forward contracts, the futures contracts standardized several features (contract size, grading definitions, delivery procedures), and began to be traded on an exchange with governance and following a specific set of rules, offered open reports, and were available only with margin deposits in order to guarantee performance. Later on, in the 1880s and 1890s, it was created an instrument for offsetting a contract before maturity, as well as it was created a specialized clearing house as third party for all transactions.

The new exchanges, in the developed countries, were organized under corporate laws strictly to trade futures contracts, but these contracts were basically financial derivatives. Developing countries, like Brazil, have strong cash agricultural and other commodities markets. Is it possible to start trading futures in these commodities without first evolving from forward contracts? In general, the discussion about this topic is presented from a financial view point. This article, however, uses the economic history approach and methods to discuss this question, presenting the history of the futures contract for cotton in the São Paulo Commodities Exchange.

5 – FUTURES CONTRACTS

A futures contract is a standard agreement between two parties, that obliges one party to sell and the other to buy a certain quantity and quality of cotton at a given price, at or before a certain date in the future.

The key word is standardization. All the conditions under which the cotton will be transferred from seller to buyer are established by the exchange before the transaction begins. The only thing left for the parties to trade and fix is the future price. Exchanges, in general, follow basic rules about margins of guarantee and daily adjustments of payment settlements for the contracts, due to daily changes in prices from the starting day of negotiation to the expiration date of the contract. Everything else is organized and set by the exchange under certain standards. It is very important that no ambiguity exists, and that all the items and conditions are understood and agreed by the parties evolved in the negotiation of the contract. Contracts, in general, have several pages and long list of details.

A standard contract of cotton presents the following specifications:

a) object of the contract (cotton);

b) type of market (future);

c) size of contract (quantity volume standard set by the exchange, in general related to the typical cargo, like the capacity of a truck or train wagon);

d) type of pricing (example : Brazilian currency/ unit of weight);

e) settlement, expiration or maturity date;

f) number of maturities dates (examples: cotton futures contracts for may, June, July, august, etc.);

g) last day of trading (in general, from 3 to 5 days before expiration);

h) quality of cotton in accordance with benchmark standards;

i) date of delivery of the cotton sold;

j) local of delivery;

k) settlement mechanism

In addition, there are detailed procedures established in the contract for the delivery of cotton when the contract expires. Most contracts are settled without delivery, by the buyer selling another contract, or by the seller buying another contract for the same maturity date.

The heart of any exchange is the registration, clearing and settlement system. Futures markets arte very leveraged in general. For instance, the cotton contract traded in BMSP, in some years, traded at a multiple of the cotton crop of that year. Today, in Brazil, he notional value of contracts traded in BM&F was in 2005 around US$ 7 trillion, against a GDP of US$ 700 billion, that is, a multiple of 10 times.

The registration, clearing and settlement system gives the guarantee the buyers will receive the cotton in accordance with the terms negotiated, and the sellers will receive on time the payment negotiated. This system, in the BMSP, evolved with the years. It started with the creation of the “Caixa de Liquidação de Mercadorias de São Paulo” in 1918, later substituted by the “Caixa de Liquidação de Santos”, and replaced by the “Sistema Paulista de Compensação”. This last System was later on called “Sistema Nacional de Compensação de Negócios a Termo S.A.”, which evolved to the system that would last till the end of BMSP, called “Caixa Nacional de Liquidação de Negócios a Termo e Disponível S.A.”.

The BMSP clearing house made the record, compensation and guarantee of the liquidation of contracts, and in the 1920s an average of 60 thousand tons of cotton was negotiated annually in the pits. For BMSP the clearing house was vital for the success of the contracts traded, and it made an effort, little by little, to build an efficient and reputable infrastructure for the classification, standardization and public disclosure of cotton future contracts trading.

The Clearing House of BMSP earned several distinctions in the 1930s and 1940s. From the United States Ministry of Agriculture, it received the title of “the best organization specialized in cotton in the world”. The Vargas government of Brazil, in September of 1941, as recognition of BMSP role in the development of both agriculture and industry, granted the Exchange the duties of “official technical and advisory organ”. The Exchange became a prominent member of the International Cotton Institute (ICI) and also became the official representative in Brazil of the Association for International Cotton Emblem (AFICE).

6 – REQUIREMENTS FOR A CONTRACT TO BE SUCCESSFUL

The first fundamental question is to ask if the existing economic conditions are favorable for the introduction of a new derivative contract. This is the question that is the focus of the article. A second fundamental question is about the continuity through time of a contract successfully introduced, and this is the focus of another work in progress by the present author.

The world experience shows that several commodities and financial instruments, in principle, can be negotiated in the futures market. There are no precise formulas to indicate ex ante which commodities or financial instruments will succeed. The exchanges, after undergoing the huge investments for the building, trading pits, advertisement, organization, clearing houses, and other areas, have considerable economies of scope for launching new contracts.

The big problem, however, is not how to design a new contract. The real problem is how to acquire liquidity, how to have a substantial number of hedgers and speculators engaged in daily negotiations.

The accumulated experience of exchanges located in different countries point to the following list of factors to be taking into account:

a) there must exist a large and active market for the physical commodity. The larger the market, the higher the likelihood of success of the derivatives contract;
b) the participants in the physical market need to have a link with the futures market, and vice versa, in order to exist a logical and consistent connection between spot and futures prices;
c) the market needs to be competitive in all links of the production chain. Ideally, there must exist large number of producers and consumers in both the agricultural and the industrial sectors of the cotton agribusiness, to guarantee a free formation of prices. If in one of the chains there is a "price maker", this will violate the free formation of market prices;
d) The product must be homogeneous and undifferentiated, to allow interchange during delivery or trading;
e) The market should be free or have minimum government intervention on price formation and commerce of commodities. Price controls, minimum prices, intervention in the commercialization, granting of subsidies, restrictions on the demand and other government policies, if conducted without moderation, can destroy a market for derivatives;
f) The product can not be too perishable, since it would be difficult to establish rules and norms about maturity dates and delivery;
g) The market rules and the "rules of the game" shall be stable. If they change often, it becomes very difficult to design contracts, since there will be a strong element of risk, or even uncertainty;
h) The price of the commodity needs to show a volatile nature, in order to attract market players willing to avoid the frequent changes in the prices, and making them willing to manage these risks;
i) There must be transparency, abundant and timely information for the market participants;

In addition to this extensive list, it can be added the following items:

a) The commodity can be stored at reasonable costs, allowing decisions about selling immediately or holding them, in accordance with rational market strategies;
b) The commodity needs to be fit for general uses. If too much specific, it will narrow down the user base of the commodity, and fragment it into sub-commodities, each with its own special market. This will impede minimum market side, or a feasible market threshold;
c) Uncertainties or major changes in the institutional macro-environment, which happens in developing countries like Brazil, can affect the market. It happened in BMSP during 1986, when the government decreed a freeze in all prices as a desperate attempt to eliminate hyperinflation. The futures market for the months ahead, however, was signaling rising prices, specially for live cattle contracts. The government became upset with the market behavior and made an intervention with police force, shutting down the BMSP for a few days;
d) There are also microeconomic factors repealing new entrants, like the financial mechanics of futures contracts, reflected in need for cash flows and close follow-up by market participants; or the intricacies of the written contracts, that are sometimes considered too complex by cotton producers;

BMSP, a pioneer exchange in a developing country, in addition for the concern with all items listed above, had to intervene into other areas, an effort not common in exchanges belonging to developed countries:

(i) the activities supported financially and with team collaboration of BMSP to "Instituto Tecnológico de Campinas", a leading research center in cotton agriculture in São Paulo and in Brazil, for obtaining new varieties of cotton and to increase technical expertise in cotton agriculture;
(ii) educational campaigns to spread the cultivation of cotton in the state of São Paulo (note: São Paulo was, and still is, the leading state in the country; it has an area equivalent to Spain, and a GDP of more than US$ 300 billion today);
(iii) the development of a classification system for cotton, in accordance with business standards;
(iv) training of human capital and provision of professional education for developing and managing the classification system;
(v) creation of a "Trade Justice Court" to arbitrate disputes involving the trading of cotton, including disputes about the classification of cotton;
(vi) development of an industrial sector widespread in the state in order to transform raw cotton into cotton useful for manufacturing and exports;

(vii) fostering of trade links and commercial connections between cotton processors and derivative brokers of the exchange;

(viii) development of cultural activities sponsored by BMSP to attract good will for the Exchange;

(ix) creation of links and common objectives between government and BMSP, including the special permit to act as an "ad hoc" government agency for educational and classificatory activities in the cotton business;

7 - GENERAL CONCLUSIONS

The writing of this paper about the economic history of BMSP had four objectives in view: (1) the exam of the process of development of futures contracts for commodities in developing countries, and the role of forward contracts; (2) the theoretical ambition of using a case study of long duration in order to investigate the reasons why a derivative contract becomes viable and attracts liquidity in a sustainable way. Since the launching of a new contract is a very expensive investment (today, around US$ 10 million), and since the rate of failure (9 failures out of 10) is very high, the study can add the perspective of an economic history case study for a growing literature very theoretically focused; (3) Additionally, Brazil, although a developing country, is very strong in the agro-business sector, and it is important to have a long institutional view of the development of derivatives markets in the country; (4) BMSP was involved with a large set of activities, in addition to the trading of derivatives. These activities – several of them in the areas of learning, innovation in products, institutional development, and the discovery of new technologies- were made as a way of helping the main business of the derivatives exchange. Thus it can be an important study about the larger requirements – in comparison with other economies – that are needed in order to create a derivatives exchange in a developing country, and can offer an international comparative perspective.

This paper is part of a larger project, which will study the external macroeconomic and institutional factors, and the internal factors of the architectural organization and the decision making process of the Exchange, with the focus on the causes of the growth and decay of trading in cotton contracts.

8 - STATISTICAL APPENDIX

RAW COTTON - SÃO PAULO

Cotton Production and Futures Trade in Trading Floor, BMSP, 1918-1990.

YEAR	Production (tons)	Futures Contracts (in tons)	Futures Contracts (number of contracts)	YEAR	Production (tons)	Futures Contracts (in tons)	Futures Contracts (number of contracts)
1918	13 913	608	81	**1955**	231 837	70 310	9 375
1919	49 617	900	120	**1956**	199 156	10 110	1 348
1920	20 647	63 383	8 451	**1957**	136 227	1 720	229
1921	25 904	42 578	5 677	**1958**	143 830	130	17
1922	13 188	105 143	14 019	**1959**	187 975	10	1
1923	13 599	64 973	8 663	**1960**	197 467	-	-
1924	25 371	47 423	6 323	**1961**	197 967	30	4
1925	26 896	36 945	4 926	**1962**	276 705	-	-
1926	16 58	61 733	8 231	**1963**	226 011	-	-
1927	8 644	11 040	1 472	**1964**	227 210	-	-
1928	9 987	13 890	1 852	**1965**	199 097	-	-
1929	4 435	3 960	528	**1966**	270 722	-	-
1930	3 934	383	51	**1967**	167 331	-	-
1931	10 500	1 163	155	**1968**	247 865	540	72
1932	21 271	743	99	**1969**	313 612	203	27
1933	34 748	8 065	1 075	**1970**	304 173	8	1
1934	102 296	4 850	647	**1971**	265 494	1 538	205
1935	98 207	15 795	2 106	**1972**	270 234	2 640	352
1936	176 810	35 498	4 733	**1973**	247 471	2 865	382
1937	202 618	45 420	6 056	**1974**	207 483	1 425	190
1938	248 296	37 088	4 945	**1975**	189 841	105	14
1939	273 264	52 695	7 026	**1976**	118 009	668	89
1940	305 377	153 615	20 482	**1977**	212 839	2 850	380
1941	380 767	324 780	43 304	**1978**	157 059	2 528	337
1942	282 665	341 513	45 535	**1979**	196 170	36 525	4 870
1943	375 098	296 993	39 599	**1980**	202 810	71 745	9 566
1944	463 193	485 655	64 754	**1981**	217 486	6 548	873
1945	232 674	417 450	55 660	**1982**	213 458	608	81
1946	173 349	584 880	77 984	**1983**	180 772	304	44
1947	175 255	120 113	16 015	**1984**	191 836	544	145
1948	149 138	26 993	3 599	**1985**	272 967	2 066	551

1949	221 661	25 110	3 348	**1986**	261 130	570	118
1950	165 149	46 710	6 228	**1987**	205 989	82	11
1951	230 571	227 910	30 388	**1988**	249 918	53	7
1952	350 790	66 660	8 888	**1989**	187 159	-	-
1953	235 504	5 253	700	**1990**	178 099	22 163	1 744
1954	220 201	30 180	4 024				

Source: Bolsa de Mercadorias de São Paulo, Annual Reports and Statistical Reports.

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