

Modifications in the Brazilian Agroindustrial Systems Financial Governance: Public Politics, Internationalization and Private Coordination

Sigismundo Bialoskorski Neto¹
Lúcio César Cury Juns²

Abstract

The aim of this study was to analyze the transaction costs and the financial *governance* implications in the agroindustrial system financing architecture, inside their boundaries and between the process different stages.

Therefore, the reader is positioned according to the recent modifications in the firm external setting and, in particular, in the Brazilian *agribusiness* financing standards; then, the basic TCE theoretical fundamentals applied to the financial structure are considered.

Afterwards, an extension of the theory is elaborated to explain the *agribusiness* financing standards. Finally, the current financing situation of the sugar and alcohol and soybean *agribusiness* and the recent modifications under the TCE point of view are discussed and explained.

¹ Professor Doctor, Department of Economics. Faculty of Economics, Administration and Accountancy, FEA/University of São Paulo, Campus Ribeirão Preto. Researcher of PENZA – Program of Studies of the Agroindustrial System Business. e-mail: sbialosk@usp.br

² Undergraduate, Department of Economics. Faculty of Economics, Administration and Accountancy, FEA/USP, Campus Ribeirão Preto. National Scientific Council .fellow.

1. Modifications in the institutional environment

The agricultural activity in Brazil has undergone transformations in the last decades; among recent modifications the issue of the so-called “big crops” successive sequence is outlined. Continuous growth in the total agricultural production is observed, taking place simultaneously to a decrease in the total cultivated area and consequent productivity gain.

According to Melo (1996), the Brazilian grain crops planted area decreased 9.6% from 1988 to 1995, while production increased 15.2% and productivity increased 27.4% during the same period. Figure 1 depicts this situation as far as the soybean culture is concerned. From 19.8 million tons in 1990 this culture produced 31.2 million tons in 1998, a 57.5% positive variation during this period. The average productivity showed a 35.3% increase, from 1.7 t/ha in 1990 to 2.3 t/ha in 1998. These significant variations occurred while the planted area showed a small variation from 11.4 million ha to 13.4 million ha, that is, 17.5%.

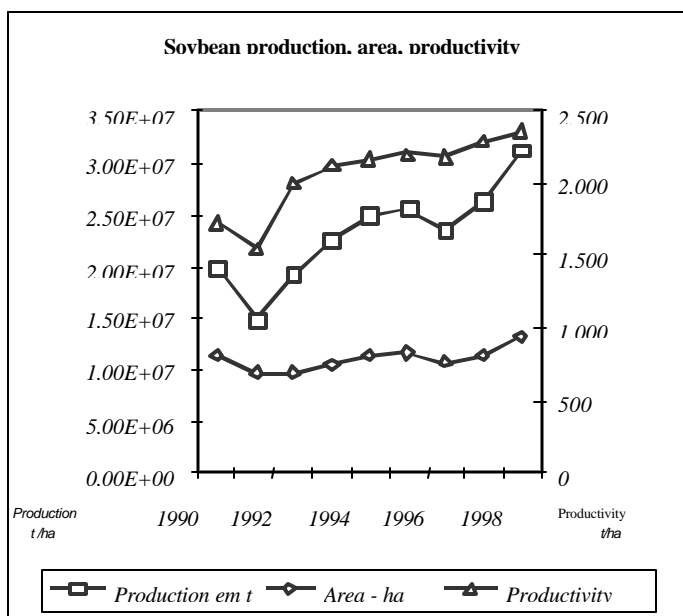


Figure 1. Evolution of soybean production, planted area and productivity, from 1990 to 1998. *Source: CONAB-1998.*

This situation could represent only a technological gain during the recent period, if two important verifications would not have been made: a) decrease in the official rural credit amount, and b) increment of coordination, contractual relationships and between the productive stages in some important *agribusiness*.

Figure 2 shows the modifications in financing and credit standards and in agricultural and agroindustrial activities paralleling the crops constant growth.

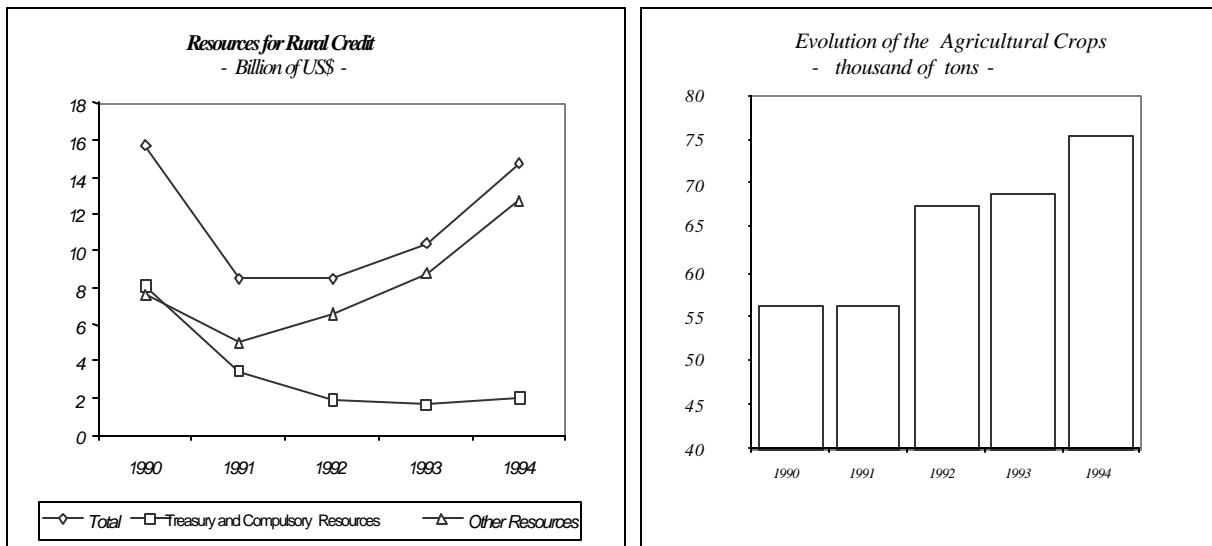


Figure 2. Official rural credit amounts and agricultural crops production. Evolution from 1985 to 1996. *Source: Banco Central do Brasil and CONAB.*

Apparently, there exist significant public politics and institutional setting modifications where the *agribusiness* activities develop. Figure 2 shows clearly the decreasing official rural credit volumes not leading to a decreased production, but, instead, to increased consecutive *super crops*.

Initially, one can underscore that the necessity to control the inflationary process in the 80s and 90s led the government to reduce the resources for the agricultural public politics main instruments, and also the amounts applied to rural credit official operations.

Barros (1998) presents the public expenditures in agricultural politics in Brazil showing that there was a reduction from US\$ 10,9 billion in 1987 to only US\$ 5,6 billion in 1996, that is a 48.6% reduction. Concerning rural credit, the amounts vary from US\$ 31,8 billion in 1987 to only US\$ 8,8 billion in 1996, representing a 72.2% reduction in the period.

When inflation was controlled after the successful “*Plano Real*”, it was necessary to control the government fiscal deficit, and considering the agricultural public politics the financing was oriented with more emphasis to the familial agriculture, by means of the PRONAF - Familial Agricultural Support Program, and to give support to the agrarian reform process by means of the PROCERA – Agrarian Reform Settlement Special Credit Program, while for the big cultures there was a government effort to stimulate new credit and financing private instruments.

Therefore, new instruments were stimulated as the “CPR – Cédula de Produto Rural”, rural product bond operated by the “Banco do Brasil”, the so-called “*63 caipira*” operations consisting in searching external resources for the agricultural activity, the increment of the ACC’s – Exchange Contract Down Payment, as well as instruments to draw external and also internal private resources for the agricultural sector, among others.

The agriculture public politics modifications also aimed to stimulate operations in the futures market, by means of BM&F – Commodities and Futures Exchange, as an income stabilization and futures prices fixation instrument, as well as the launching by the government of *Selling Options*, as part of a public politics to substitute the former PGPM –Minimum Prices Guarantee Politics.

It is possible to observe the recent growth of the Brazilian agricultural commodities futures markets; in 1991, there were only coffee and cattle futures contracts in contrast with the present situation with coffee, cattle, sugar, soybean, corn and cotton contracts. In addition to rising numbers of agricultural *commodities*, Table 1 depicts the increase in the number of operations considering each of these contracts in recent years.

Presently, a new grain *super-crop* is being anticipated, of about 83 million tons, with expectations of better profits for the agriculture due to the international commercialization after

the recent modification in the Brazilian exchange rules. The prices in Brazilian currency should be 26.4% and 11.5% higher for soybean and sugar, respectively. However, connected to this situation is the agricultural enterprises outstanding debt in dollars which increased approximately 58.3% during the same period.

Thus, important modifications are observed, as those resulting from the public politics modifications aiming maintenance of profits and those resulting from the financing standard modifications in the rural sector. These facts show that the State is distancing itself from its traditional functions: the incentive to private initiatives and the agricultural sector alternative forms of financing in Brazil. Initially, the reasons why this occurred must be analyzed as well as the financing and coordination standards adaptations which allowed continuous productivity and technology profits culminating in a constant growth of production, part of the aim of this study.

1.1 The new financing instruments

According to GASQUES & VILLA VERDE (1996), after the 80s there was an incentive to private resources for agriculture in Brazil. These resources have private origin in Brazil and capital resources of international origin.

Financing for the Sugar and Alcohol and soybeans agribusiness comes, mainly, through short and long term external collection forms. The collections occurred via No. 2148 “Banco Central” Resolution, March 16, 1995, the so-called “63 Caipira” or “63 Rural”, short term Exchange Contracts Down Payment (ACC) and pre-payments with one-year credit. For the soybean agribusiness, besides these sources, there are also private national sources as CPR – Rural Product Bond now important to finance the system.

In the 90s, the financial crisis of the State induced the government to reduce the rural credit resources: diminish the acquisitions of agricultural products resulting from the minimum prices guarantee politics, forming smaller stocks, reducing subsidies to regional development programs. After that, the volatility of the agricultural products prices increased substantially and opened space for the futures markets to play their role protecting prices and transferring their risks in a private field of action.

The main politics adopted to strengthen the rural futures market aimed to elaborate new futures contracts to meet the *hedgers* demands in the coffee, cattle, cotton, sugar, soybean and

corn markets; create instruments of liquidity to the futures market implementing new contract clearance forms; establish the use of cash payment indicators in order to eliminate the risk of goods physical delivery; and provide consistently a transparent convergence of prices.

From 1995 to 1997 the sugar futures market grew 132% and by the end of 1997 there were more than 10,000 sugar contracts in the BM&F; in the soybean market the futures contracts increased from 3,750 contracts in 1995 to 17,914 by the end of 1997 (Table 1). In 1997, the government launched a far-reaching program based in *sales options* for the rural producer's acquisition as a form of implementing a new price guarantee politics for the agriculture.

Table 1. Evolution in the number of contracts negotiated in the agricultural commodities futures markets, in Brazil, from 1991 to 1997.

	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
<i>Sugar</i>					4,301	6,212	10,005
<i>Cattle</i>	1,550	7,046	7,438	5,687	39,174	117,395	116,752
<i>Coffee</i>	11,839	50,873	87,753	79,220	76,206	116,071	132,748
<i>Soybean</i>					3,750	20,274	17,914
<i>Cotton</i>						2,339	16,952
<i>Maize</i>						3,696	21,680
<i>Total</i>	13,389	57,919	95,191	84,907	123,431	265,987	316,051
<i>Variation</i>		332,58%	64,35%	-10,80%	45,37%	115,49%	18,82%

Source: BM&F – Commodities and Futures Exchange

2. Theoretical fundamentals and TCE

In a microanalytical level, according to Williamson (1996), the transaction costs are associated to the organization issue, that itself will be a specific contract problem. These costs occur before – *ex ante* – or after - *ex post* - the establishment of a transaction. Therefore, the higher complexity of the financial transactions and of the agroindustrial system organization will not be influenced only by the intention to profit in imperfect markets, but will be also associated to the need to minimize costs, not only of production but also, and mainly, of transaction.

The transaction cost is a function of transaction attributes, as frequency and uncertainty, and of the *assets specificity* degree.

The *assets specificity* is directly connected to the fact that there is a limitation to the assets alternative use, causing them to lose their productive and transformational worth when they are reallocated, thus eliminating the resulting transactions. *Specificity*, interacting with the other transaction attributes, frequency and uncertainty, will determine the *governance* form which minimizes the transaction costs at the organizational level.

Governance, as a direct function of the *assets specificity*, can be understood as the form by which the transaction costs are minimized. Either by means of relationships which occur only at market level, or yet evolving till the totally internalized transactions relationships level within a single agroindustrial system, that is, inside the efficiency boundaries.

In other words, *governance* is how the organization seeks to coordinate its transactions, or else, the structure which comes from the institutional setting where transaction costs must be the minimum possible. For a better understanding, Figure 3 indicates how governance occurs as a function of the transaction attributes, frequency and *specificity*.

Figure 3 shows that *governance* can occur both via market, a situation in which *specificity* is null or very small and in unified form within the same organizational structure, when high frequency in the transactions appears allied to high *assets specificity*, also be called “vertical integration”.

		Characteristics of the inversions		
		<i>Non-specific</i>	<i>Intermediate</i>	<i>Specific</i>
Fre quen cy	<i>Occasional</i>	<i>Governance</i>	<i>Governance</i> <i>Trilateral</i>	
	<i>Usual</i>	<i>via Market</i>	<i>Bilateral</i> <i>Governance</i>	<i>Unified</i> <i>Governance</i>

Figure 3. Governance forms as a function of the transaction attributes, frequency and *specificity* (Williamson, 1985).

However, under this scope, there are intermediate types, where trilateral *governance* forms are defined, with two contract parties and one third institutional element, the transaction judge. This kind of *governance* is a known contract type, that is, there is a written contractual instrument that must be respected by the parties in question.

In the bilateral *governance*, two parties of the contract have intense relationship – it is also called relational contract – due to inversions with a certain degree of *specificity* allied to transactions which occur in the usual manner. The autonomy among the parts is preserved and the intense relationship of transactions accompanying specific inversions and temporal continuity can lead to the formation of joined distinct structures, as a specific society for a particular contract or strategic alliance.

Williamson (1996) clarifies that the corporations financial analysis elaborated by the Transaction Costs Economics examines the investment projects according to the *assets specificity* characteristics, and also, the main *governance* structures resulting from the company financial structure.

For the development of this analysis, one must assume, in behalf of simplification, that there exists a capital structure characterized by the financing situation with owned capital, or, in the other end, the situation in which the enterprise financing is effected exclusively by means of loans and debts with third parties, that is, via market.

These two opposite situations must be associated to the financial *governance* idea. Therefore, there is a *governance* via market, when the firm is financed through loans, and a *governance* via hierarchy due to the financing process with owned capital, in which the necessary resources are obtained within the company.

In the case of *governance* via market one observes that the financial agent stipulates a certain interest rate for the business, a capital cost in which the operation transaction costs are embedded. In this case, this agent must consider the time span to pay the loan, the liquidity of the business and the guarantees in order that in case of non-payment, the operation can be duly honored.

This last characteristic is important because the greater the specialization of the business probably the greater will be the specificity of the assets used in the transformation process. This

implies, directly, in a certain degree of impossibility to use the assets in other activities, and consequently, in a lower level of liquidity in the market.

That is, in case there is need to sell these assets, they will probably have a lower value than their real financed value, since they can not be used in alternative activities with the same degree of utilization and income generation. In case of insolvency or bankruptcy, the assets would behave as non-effective guarantees for the business, needing possibly also a complementation, as a function of the value differential and of the situation uncertainty.

Therefore, one can state that the financial *governance* costs by means of the markets are positive and grow proportionately to the growth of the *assets specificity*, that is, inversely proportional to the guarantees liquidity. On the other hand, considering the opposite situation, a financial *governance* totally internal to the company, that is, financing using owned capital, dividing property rights and business risks, the transaction costs composition is different.

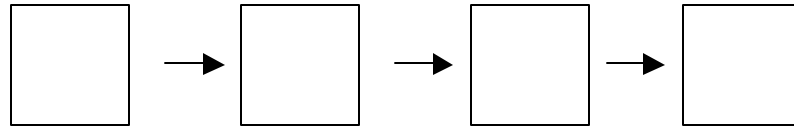
2.1 The extension of the theory

It is possible to explain the financial architecture of the agroindustrial systems analyzing the *specificity* degree of the *assets* involved in the process. One can consider that within the agroindustrial system there is a value transference financial flow when products and services are paid. In order that this system operates coordinately, the contract relationships must determine *ways and limits* in the transference process. In this case, there are transaction costs involved that must also be minimized.

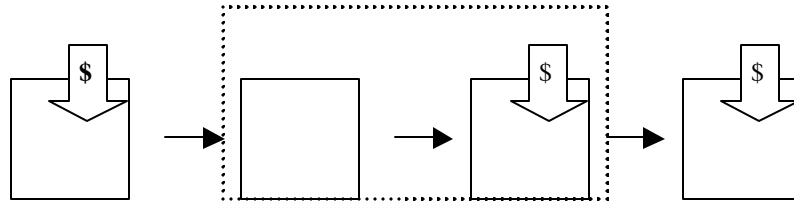
There are three particular forms to raise capital resources that permit financing of each of the agroindustrial system internal operations. In the first, Box 1, Figure 4, the resources belong to each of the agroindustrial system, in the second, Box 2, Figure 4, the capital resources come from a third agent not belonging to the agroindustrial system and are directed for each agent, and in the third, Box 3, Figure 4, the capital resources come from external sources but an exclusive transferring to the agroindustrial system is effected by one of the internal agents.

Agroindustrial System

Box 1.



Box 2.



Box 3.

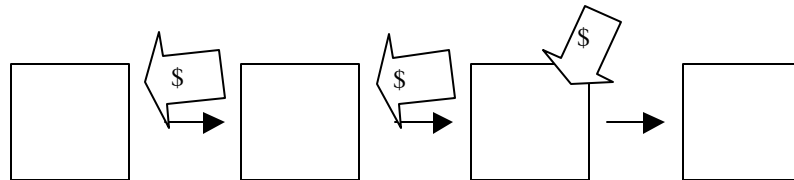


Figure 4 Agroindustrial Systems Financing Architecture

When the participants of the agroindustrial systems do not have conditions to use owned capital they tend to minimize the transaction costs using the capital within the agribusiness. This would be an agroindustrial system *hybrid* solution since collection and transaction costs of operations with third parties are effected by one segment of the system and then this flows internally to lower costs, Box 3, Figure 4.

Thus, it is possible to visualize in graphic form considering the agroindustrial system a unit of analysis where, inside its boundaries, the capital flows with transaction costs which depend of the *assets specificity*. This financing flow can be understood not only as a transference of capital but also as a transference of assets or products.

The transference of fertilizers and raw materials in the soybean agribusiness must be understood here as a financing and factor transference operation subject to transaction costs. This

fact is similar to a mixed *governance* form where there are contract relationships which regulate transactions to purchase certain products produced in other stages or deliver products to other links of the system. In addition to this contractual relationship, which regulates this product flow, there is another that allows this flow to exist; it is a financing operation along the system.

3. The case of the Soybean and Sugar and Alcohol Agribusiness in Brazil

When the evolution of the agricultural crops and of the official rural credit is analyzed for both commodities, the same already described general trend is observed, the official credit decreases but the crop increases expressively. On the other hand, a change in the financing standards is observed as well as how this occurs in each of these agribusiness.

Considering the *assets specificity* of the sugar and alcohol mills, and the fact that there is a wider frequency of contractual relationships from 3 to 5 years depending on the number of cuts, there is also a trend to develop a more stable contractual relationship, attaining also the raw material production activities integration. In the sugar and alcohol mills great part of the sugarcane belongs to the mill and the rest is rented or negotiated through long-range contracts with suppliers.

Therefore, we have a situation of *unified to bilateral governance* contract relationships with a small percentage of *trilateral* contracts relationships.

In this case the financial architecture occurs as Box 2, Figure 4, where the mill proceeds the financial operations financing only its own sugarcane. Thus, one can consider a higher *assets specificity* and the operations are internalized with only one of the agribusiness agents.

Differently, when the soybean agribusiness is examined, no vertical integration of activities is observed, and considering that there is a smaller *assets specificity*, since the plants can also be used to triturate other oleaginous components, and that the contract relationships present a relation frequency also less intense since the crop is annual, the *financial governance* form is different.

Relationships of trilateral contracts are observed, in which the producer can receive fertilizers and other raw materials and use the crop product to pay for them – the operation takes place using sacks; there are also capital down payment operations and Rural Product Bond.

Here we have *governance* in a hybrid, intermediate form, where the processor collects resources abroad, fixes the price in a futures exchange as the Chicago Board of Trade – CBOT – and proceeds the raw material financing along the agroindustrial system (Box 3, Figure 4).

Figure 5 shows again the figure elaborated by Williamson (1985) and presented in Figure 3; the sugar and alcohol and soybean agribusiness were inserted according to their transaction attributes. In the case of the Soya agroindustrial system the transactions can be less frequent and with less *assets specificity*, characterizing the trilateral contracts relationships – contracts between the producer and the processor agroindustry judged by Justice – having as a consequence of these attributes a form of financing in which the agroindustry assumes the operations and transfers them as raw material transference to other *agribusiness*'s economical agents.

As far as the sugar and alcohol agroindustrial system are concerned, the relationships are more frequent, in general over three years, and there is a greater assets specificity, so the relationships tend to be unified where sugarcane belongs to the mill and bilateral where directly there is rent and the financial operations only occur internally to the system, not being transferred.

		Characteristics of the inversions		
		<i>Non-specific</i>	<i>Intermediate</i>	<i>Specific</i>
Frequency	<i>Occasional</i>	Governance	Governance Trilateral Soybean Agribusiness	Unified Governance Sugar and Alcohol Agribusiness
	<i>Usual</i>	<i>via Market</i>	Bilateral Governance	

Figure 5 *Governance* forms as a function of the transaction attributes, frequency and *specificity* (Williamson, 1985) applied to the Soybean and Sugar and Alcohol *agribusiness*.

4. Conclusions

Concluding, one can discuss that depending on the *assets specificity* and on the transactions frequency, there are different financial *governances*, and also different contractual architecture forms in the financing operations.

In the two agribusiness analyzed, there was the same verification: albeit the governmental financing was reduced, the system kept on growing and producing more quantity with more efficiency. Therefore, the credit operations, previously carried out with governmental sources, were substituted by other operations which collected private and foreign resources to finance the agribusiness.

The modification occurred in the form of architecture which was found, bringing international resources for the sugar and alcohol *agribusiness* in an integrated manner, differently of the soybean agribusiness in which the processor agroindustry finances the other economic agents of the system collecting resources abroad and fixing the *commodity* price in the futures market.

It is possible, then, to consider that the transaction attributes as *assets specificity* and the frequency the transactions occur are important elements to reduce transaction costs and to implement a strategy, *governance*, more efficient under the agroindustrial system financial and financing point of view. As a consequence, the agroindustrial systems have financial and internal financing organizations that to minimize the transaction costs depend on different financial architectures and also on the assets and other attributes specificity.

5. References

- Banco Central do Brasil (BACEN) Circular n. 2.001, 06/08/91, n. 2.205, 24/07/92, n.2.299, 26/04/93, e Resolução n. 63, ago. 1967.
- BARROS, G. S.C. A transição na política agrícola brasileira. In; AGUIAR, D.R. e PINHO, J.B. *O agronegócio brasileiro: Desafios e perspectivas*. Brasília, SOBER. 1998.
- FAMA, E. JENSEN, M. Separation of ownership and control. *Journal of law & economics*. V.26, p.301-325, 1983.
- GASQUES, J. G. & VILLA VERDE, C. M., Novas Fontes de Recursos, Propostas e Experiências de Financiamento Rural, *Revista de Economia e Sociologia Rural*, vol.34, n.3 e 4, 1996.
- JUNS, L.C.C. A Captação de Recursos Internos e Externos pelo Setor Sucroalcooleiro da Região de Ribeirão Preto. Relatório de Pesquisa CNPq - PIBIC - FEA. Ribeirão Preto. 1998.
- MELO, F.H.M. Propostas de política agrícola. São Paulo, FEA. 1996. (mimeo)
- OLIVEIRA, Jader J., O Impacto da Crise Fiscal Brasileira nos Anos 80 no Crédito Rural: Mecanismos e Instrumentos Alternativos de Financiamento Agrícola, dissertação de mestrado, Unicamp, 1995.
- WILLIANSO, O. E. *Las instituciones económicas del capitalismo*. México, Fondo de Cultura Económica, 1985. 431p.
- WILLIANSO, O. E. *The mechanisms of governance*. New York: Oxford University Press, 1996. 429p.