Organisational Remodelling of Agricultural Co-operatives: A Research Agenda

Constantine Iliopoulos[1]

Abstract

Historically and in various parts of the world, traditional agricultural co-operatives have played a significant role in correcting market failures, contributing to the achievement of rural development goals, the generation of local social capital, and the provision of incentives for sustaining the environment. However, agribusiness globalization-induced challenges coupled by intra-organisational hurdles have led to the need for a radical redesign of this unique organisational arrangement. The term used to describe the resulting offensive organisations is "collective entrepreneurship." The goals of this paper are to 1) identify and discuss challenges and critical issues that arise as traditional co-operatives move toward becoming collective entrepreneurship firms, 2) outline a scholarly research whose topics are linked to these challenges, and 3) introduce Complexity Economics as an emerging theoretical framework that might inform the identified research questions.

[1] Dr. Constantine Iliopoulos, Researcher, Agricultural Economics and Policy Research Institute, and Adjunct Professor, Department of Agricultural Economics and Rural Development, Agricultural University of Athens, Athens, Greece.

1. Introduction

The importance of co-operatives as a mode of organisation in the agrofood supply chains of Europe, the U.S.A., and Oceania cannot be overestimated. High levels of asset ownership, number of members and market shares in both upstream and downstream markets all lend support to this observation (ICA; USDA).

More recently, however, agricultural co-operatives are facing major organisational and financial challenges in their attempt to respond to globalization, free trade, and the industrialization of agriculture. Co-operative failures, restructuring, and the emergence of non-traditional co-operative models during the last twenty years, have motivated organisational economics scholars to study the nature of co-operative ownership and its efficiency implications (e.g., Cook 1995; Srinivasan and Phansalkar 2003). Most of the aforementioned phenomena and the challenges facing agricultural co-operatives have been attributed to their unique property rights structure (Cook 1995; Holmström 1999).

Ill-defined and misaligned ownership rights in traditional co-operatives give rise to a set of five investment, control, and collective decision making constraints. During most of the twentieth century, successful co-operatives around the globe used various selective incentive mechanisms to foster homogeneity of their members' utility functions and overcome these constraints. However, these constraints to organisational efficiency became increasingly binding during the last part of the 20th century as producers began to shift their preferences toward more multiple rent-generation and risk-bearing strategies.

Subsequently, co-operative leaders around the globe adopted three generic strategies: 1) exit, 2) moderate remodelling, and 3) radical remodelling (Iliopoulos, 2008). The radical remodelling strategy has resulted in the emerging phenomenon of "Collective Entrepreneurship," that is, the joint process by which patron-investors design, finance, and incorporate a path-dependent collective action form of multiple level rent generation (Cook et al. 2008, p. 1). The transition to this new form of collective action in agriculture has given rise to a number of new challenges for co-operative leaders and member patrons.

The purpose of this paper is to identify some of these challenges, derive a related research agenda, and propose theoretical developments that might be

useful in addressing these agenda items. The paper is organized as follows. First, we discuss the emergence of collective entrepreneurship and identify key challenges arising in the process of forming collective entrepreneurship firms. The third section proffers a list of research topics derived from the aforementioned challenges, introduces developments in Complexity Economics that might inform the identified research questions, and discusses the resulting implications for collective entrepreneurship research. The fourth section concludes the paper.

2. From traditional agricultural co-operatives to collective entrepreneurship

2.1. The evolution of traditional agricultural co-operatives

The unique institutional arrangement called traditional agricultural co-operative emerged in Europe, North America and Oceania during the late 19th and early 20th centuries primarily as a means for combating various types of market failures, addressing food security and safety issues, and providing various local public goods. This form of collective action is mainly observed in countries where production agriculture is dominated by family farms (Valentinov, 2007). The defensive nature of traditional co-operatives is attributed to their primary objective which was to pass risk-bearing to the co-operative level so that individual member patrons could maintain their on-farm rent generating capacity (Cook/ Plunkett, 2006).

In accordance with their goals, traditional co-operatives adopted ownership structures that supported the transfer of risk-bearing functions to the co-operative firm. As a result and in contrast to investor-owned firms (IOFs), co-operatives' residual claims are restricted. Ownership in traditional co-operatives[2] is assigned only to member-patrons who supply the firm with its major inputs and at the same time own the residual rights to control the firm. Furthermore, no secondary market exists to value residual returns in the co-operative firm while such returns are only partially redeemable. The ownership horizon of co-operative residual claims is also restricted since member-patrons' ownership is valid only as long as they patronize the co-operative (Vitaliano 1983).

[2] Traditional agricultural co-operatives possess the following characteristics: open membership, risk capital generated mainly by means of retained earnings from member patronage, illiquid ownership rights, and their main objective is to safeguard the on-farm rent generation capacity of their member-patrons.

This structuring of co-operative property rights so as to combine the roles of residual claimant, patron, and residual controller into a single agent, eliminates many of the conflicts of interest between these agent roles and thus provides incentives for participating in cooperatives (Vitaliano 1983). Also, it has provided traditional agricultural cooperatives around the world with some unique strategic advantages (Cook/ Iliopoulos 1998). At the same time, however, it is responsible for five investment, control, and collective decision making constraints to efficiency. These are the internal free rider, investment horizon, portfolio, control, and influence costs problems (Cook/ Iliopoulos 2000).

Over time co-operative memberships became less homogeneous, in demographic and preference terms. Subsequently, co-operative leaders became more aware of the aforementioned problems and started designing relevant solutions. Three generic strategies have evolved since the mid-1980s: (1) exit, (2) moderate remodelling, and (3) radical remodelling (Iliopoulos 2008).

Traditional agricultural co-operatives choosing an exit strategy have preferred one of two alternatives: (i) liquidation of the cooperative, or (ii) conversion to an IOF structure (Schrader 1989; Collins 1991a, 1991b; Cook and Iliopoulos 1998). Another exit strategy, at the member-patron level, has also been observed; some of the members leave the co-operative and start a new, non-traditional one.

The second strategy refers to moderate changes in the organisational structure of co-operative firms so that they can minimize collective decision making costs and/or attract risk capital from their members. Generic solutions in this approach include the implementation of user-alignment methods, member-retaining policies, control of supply, innovative equity capital acquisition techniques, and risk/measurement transparency-increasing tools (Cook/ Iliopoulos, 1998).

The radical remodelling option includes approaches such as merger with another co-operative, conversion to a non-traditional co-operative (e.g., a new generation co-operative), the introduction of non-member residual claimant rights, and the introduction of non-member residual control rights (Iliopoulos 2008). Some of the non-traditional co-operative models have been conceptually grouped in what is termed collective entrepreneurship. This new concept refers to the joint process by which patron-investors design, finance, and incorporates a path-dependent collective action form of multiple level rent generation (Cook et al., 2008).

2.2. Challenges and critical issues

The organisational changes currently observed in co-operatives and the transition from traditional agricultural co-operatives to collective entrepreneurship has given rise to several issues critical for the success of rural, entrepreneurial collective action. As the property rights problems of traditional co-operatives are ameliorated through the adoption of innovative models and methods, new challenges emerge. The following is a partial list of the issues that have surfaced as co-operatives become increasingly interested in improving their capacity to generate entrepreneurial rents:

- Designing efficient incentive mechanisms and organisational structures in order to attract risk capital and minimize agency and collective decision making costs. The need to ameliorate their property rights problems has forced traditional agricultural co-operatives to seek alternative organisational models and micro-level solutions. However, efficient mechanism design should always be among the top priorities of collective entrepreneurship firms for four reasons. First, as some of the property rights constraints are ameliorated new ones may emerge. The interrelationships and dynamics of particular solution mechanisms is an area that deserves the attention of both scholars and co-operative leaders. Second, the rapid and fundamental changes occurring in the global food system may render some solutions inefficient. Third, not all solutions are applicable to all cooperatives. Thus, mimicking other successful organisations does not suffice. Instead, cooperative leaders should conduct a thorough study of the particularities of their firm before implementing any organisational change. Fourth, when designing incentive mechanisms to attract risk capital, cooperative leaders should be cautious in allocating residual control rights to non-members in addition to any residual claimant rights.
- Designing rent-seeking strategies that take into account the uniqueness of the co-operative organisational form and, at the same time, enable them to perform better than their competitors.
- Adopting measurements of performance that reflect more clearly and accurately the goals of their member patrons and provide guidelines for achieving successful long-term growth of the collective firm. Such performance measurements should be tailored to the reporting needs of various sub-groups of members.
- Improving public policy makers' understanding of the property rights structure of traditional cooperatives and the resulting unique challenges facing such firms. As a result they will be able to understand the transition to collective

entrepreneurship and design better-informed policies. Both regulatory (e.g., anti-trust) and rural development agencies would benefit from acquiring this knowledge. Rural development specialists in North American countries have already started appreciating the numerous public goods and social capital-type-of-benefits accruing to local communities across the continent (Merrett/ Walzer 2001).

- Designing and implementing allocations of residual control and residual claimant rights that enhance the homogeneity of members' utility functions, particularly in the long run. Homogeneity of members' economic interests has been cited by many cooperative scholars as a prerequisite for achieving the significant coordination benefits arising from efficient co-operation (e.g., Iliopoulos/ Hendrikse 2009).
- Designing payment schemes, cost allocation rules, and other related policies that minimise the negative externalities imposed by wealth-redistribution decisions. Influence costs incurred at both the cooperative and individual member levels represent a dominant form of these externalities.
- Designing manager compensation packages aimed at minimising agency and collective decision making costs. Recent research suggests that the structure of the compensation received by cooperative managers affects their incentives to pursue personal goals instead of the objectives set by member patrons (Iliopoulos/ Hendrikse 2009).

These challenges are used in this paper as the basis for compiling a scholarly research agenda whose goal is to address issues critical to the successful transition of traditional co-operatives to collective entrepreneurship.

3. A research agenda on the transition from traditional co-operatives to collective entrepreneurship

3.1. Research topics

As agricultural co-operatives around the globe become increasingly offensive organisations in order to meet their members' needs, co-operative scholars are faced with a number of emerging research questions. The following is but a partial list of surfacing research topics:

- Introduce collective entrepreneurship into the theory of the co-operative firm. Incorporating entrepreneurship into the general theory of the firm is a burdensome task to start with. It is even more difficult to introduce collective entrepreneurship into the theory of the co-operative firm. One of the major

hurdles is to incorporate the various types of collective decision making costs and study their economic implications.

- Identify variants of the five property rights constraints of traditional agricultural co-operatives, including mechanism-resistant constraints that have surfaced because of the implementation of a particular solution mechanism.
- Understand how strategy choice is different in IOFs relative to producer-owned entrepreneurship firms. While this issue has been partially addressed for traditional co-operatives, the emergence of collective entrepreneurship brings it back in the research agenda.
- Understand the *raison d' ètre* of particular types[3] of co-operatives. Directly related to this research topic is the need to get insights into the evolution of co-operatives.
- Develop measurements of performance for various types of collective entrepreneurship firms. Such indicators should provide much more than mere accounting information and be tailored to the monitoring needs of the various co-operative stakeholders.
- Identify and measure the public goods supplied by collective entrepreneurship firms, including the generation of local social capital and the attainment of rural development goals.
- Study whether and under what circumstances collective entrepreneurship firms should be afforded antitrust immunity. The significant body of research on the ownership structure of co-operatives that has been accumulated during the last twenty five years should inform and extend more traditional industrial organisation approaches to this question.
- An equally important topic for scholarly inquiry is whether collective entrepreneurship firms should receive public policy support, including the various forms of technical assistance.
- Understand if, how, and why the various types of collective entrepreneurship differ and what are the consequences of such differences.

These research topics are directly linked to the challenges facing traditional cooperatives on their way to becoming collective entrepreneurship firms. Table 1 identifies and summarizes these links.

[3] "Type" in this context should be interpreted as alternative organisational/ownership structures.

Challenge/Issue	Research Topics
Design efficient organisational structures and incentive mechanisms	o Introduce collective entrepreneurship into the theory of the co-operative firm o Identify variants, particularly mechanism-resistant ones, of the five property rights constraints and propose solution instruments
Design Ricardian rent-seeking strategies tailored to the needs of member patrons	o Understand how strategy choice differs between IOFs and collective entrepreneurship firms
Design relevant measures of performance	o Understand the raison d' ètre of particular types of co-operatives and the reasons behind their observed evolution o Develop relevant measurements of performance for the various types of collective entrepreneurship
Improve policy makers' understanding of property rights problems and the need to adopt alternative organisational structures	o Identify and measure public goods supplied by collective entrepreneurship firms o Study under what circumstances should collective entrepreneurship firms be afforded antitrust immunity and/or receive public support
Allocate residual control and residual claimant rights so as to maximise homogeneity of members' utility functions	o Identify variants, particularly mechanism-resistant ones, of the five property rights constraints and propose solution instruments
Design payment schemes and cost allocation rules that minimise the influence costs resulting from wealth redistribution decisions	o Identify variants, particularly mechanism-resistant ones, of the five property rights constraints and propose solution instruments
Design manager compensation packages that minimise control and influence costs	o Develop relevant measurements of performance for the various types of collective entrepreneurship

Table 1: Links between Challenges/Issues during the transition from traditional co-operatives to collective entrepreneurship and research topics

3.2. Theoretical approaches

To address the issues facing cooperative leaders from a scholarly point of view, one turns to the various theories of the cooperative firm. However, very little can be found in these theories on entrepreneurship and, particularly, on

collective entrepreneurship. Despite the growing adoption of non-traditional economic theories in studying co-operatives such as the coalition and the nexus of contracts approaches, entrepreneurship remains a black box inside the 'black box' of the cooperative firm (e.g., Cook et al., 2003). Equally problematic are traditional economic theories of cooperatives in addressing issues such as strategy and the design of mechanisms that provide selective incentives to member patrons. Recent developments in economic theory, however, have a significant potential to inform the abovementioned issues. Particularly, the emerging theoretical approach of 'Complexity Economics[4]' might be useful in framing and addressing the abovementioned research topics.

Many different terms have been used to describe one or more aspects of Complexity Economics. Computational economics, agent-based modelling, evolutionary economics, institutional economics, behavioural game theory, and the Santa Fe School are just a few of these terms. In order to understand more clearly the content of Complexity Economics, it is useful to contrast it to the traditional approach.

Traditional Economics is "the set of concepts and theories articulated in undergraduate and intermediate graduate-level textbooks. It also includes the concepts and theories that peer-reviewed surveys claim, or assume, that the field generally agrees on" (Nelson/ Winter1982, p. 6). Traditional economics includes the contributions of numerous economists since the classical period of Adam Smith and the marginalist era of Walras and Pareto. However, by the end of the twentieth century, Traditional Economics was dominated by the Neoclassical paradigm. Neoclassical Economics is based on the heroic assumptions of rational, optimising consumers and producers making choices in a world of finite resources, and most of these choices being bounded by decreasing returns (Beinhocker 2006). This combination of self-interest and constraints then drive the economy to the Pareto optimal point of equilibrium. The methodology of economic analysis was also dominated by the use of mathematical proofs that began with a set of assumptions and then built logically up to a set of conclusions. Despite its mathematical rigour and significant contributions to understanding the workings of the economy, Neoclassical Economics' unrealistic assumptions have attracted severe criticism. Among the most heavily criticised are the assumptions of unlimited foresight of economic actors; unbelievable simple worlds (e.g., zero transaction costs, companies always work as efficiently

[4] The term 'Complexity Economics' was first coined by Beinhocker (2006, p. 80).

as possible, economic decision makers only interact with each other through price, usually through an auction mechanism); and that all products are pure commodities sold on price (e.g., Simon 1963; Williamson 1996, p. 40).

Complexity Economics is an attempt to understand economic behaviour and outcomes by making assumptions that depict the reality it tries to explain. While this new paradigm has been successful thus far, it is still a research programme rather than a new, synthesised economic theory (Beinhocker 2006, p. 96). The following table borrowed from Beinhocker describes how Complexity Economics differ from Traditional Economics along five important dimensions.

	Complexity Economics	Traditional Economics
Dynamics	Open, dynamic, nonlinear systems, far from equilibrium	Closed, static, linear systems in equilibrium
Agents	Modelled individually; use inductive rules of thumb to make decisions; have incomplete information; are subject to errors and biases; learn and adapt over time	Modelled collectively; use complex deductive calculations to make decisions; have complete information; make no errors and have no biases; have no need for learning or adaptation (are already perfect)
Networks	Explicitly model interactions between individual agents; networks of relationships change over time	Assume agents only interact indirectly through market mechanisms (e.g., auctions)
Emergence	No distinction between micro- and macroeconomics; macro patterns are emergent result of micro-level behaviours and interactions	Micro- and macroeconomics remain separate disciplines
Evolution	The evolutionary process of differentiation, selection, and amplification provides the system with novelty and is responsible for its growth in order and complexity	No mechanism for endogenously creating novelty, or growth in order and complexity

Table 2: Differences between Traditional and Complexity Economics (Beinhocker 2006, p. 97)

Complexity Economics uses many of the traditional methodological approaches such as theorems, equilibrium analysis, and game theory. Yet, such

methods would not suffice to analyse the aforementioned issues of agents, networks, emergence, and evolution (Beinhocker 2006, p. 96). Thus Complexity Economics uses advances in physics, biology, computer science, and other fields in order to study the economy as an open, dynamic system.

3.3. Implications for research on collective entrepreneurship

Complexity Economics views organisations as complex adaptive systems (Aldrich 1999, p. 4) that "carry out thermodynamically irreversible transformations of matter, energy, and information, converting high-entropy inputs into low-entropy outputs in pursuit of their goals" (Beinhocker 2006, p. 352). As such, in an evolutionary view of organisations, they represent vehicles for creating "fit order" and wealth.

With respect to the organisational structure of cooperatives, Complexity Economics can help us shed light on several important questions such as why cooperatives exist or why has their organisational architecture evolved the way it did. According to this set of theories, agricultural cooperatives exist because, under certain circumstances, they provide a better means for dealing with incomplete contracts and hold-up problems, while they represent a better vehicle for collective learning and long-term cooperation (Coase 1937; Williamson 1995).

The evolution of agricultural cooperatives from traditional structures to collective entrepreneurship could also be explained by applying the logic of Complexity Economics. As our methods for organising have evolved, this has enabled us to "build organisations that are more and more sophisticated, which in turn have enabled us to discover and execute increasingly complex and wealth-creating business plans" (Wright 2000, p. 14). This view suggests that the increasing organisational complexity of agricultural cooperatives observed during the last twenty years was a prerequisite for capturing off-farm rents in highly competitive markets.

Another area of co-operative organisation informed by Complexity Economics is that of influence activities. Co-operatives, like any other organisation, need to perform two distinct tasks: execute in order to survive today's challenges and adapt in order to survive the challenges of tomorrow. These two competing needs fuel constant competition for organisation and stakeholder resources, including management's time between achieving high

performance in the short run and the need to invest in setting and reaching long-run, strategic goals (Axelrod/Cohen 1999. pp. 43-50). Satisfying both of these needs demands that decision makers have at their disposal all information available. Given the unique ownership structure of co-operatives, satisfying these tasks simultaneously is expected to give rise to all kinds of influence attempts (Iliopoulos/ Hendrikse 2009).

Complexity Economics might also be proved useful in addressing strategy questions in collective entrepreneurship. The traditional approach to strategy rests on two fundamental assumptions (Mas-Colell et al. 1995, pp. 167-215). The first posits that one can make confident predictions about what strategies will be successful in the future. The second states that companies can make strategic commitments that will result in sustainable competitive advantage. Complexity Economics asserts that all competitive advantage is temporary (Wiggins/Ruefli 2002). Thus it deems both of these assumptions as wrong. The key to doing better is to 'bring evolution inside' and get the wheels of differentiation, selection, and amplification spinning within a company's four walls (Dixit/ Pindyck 1994). Adaptive mind-sets are necessary in this evolutionary race. This view of firm strategy as a portfolio of experiments or real options suggests that a company should invest in more than one technologies or products and commit to one of these only when the evolutionary processes of differentiation, selection and amplification have provided sufficient evidence as to where the market is headed.

Two areas of knowledge regarding collective entrepreneurship seem to be informed by this view of strategy. First, given the investment portfolio constraints facing traditional agricultural co-operatives, Complexity Economics might be able to shed light on the assertion that agricultural co-operatives tend to invest in declining industries (Staatz 1987, p. 89). On the other hand, research adopting the Complexity Economics approach has shown that the single origin constraint (i.e., that the product requiring the inputs of the members will never be divested) results in highly coherent clusters of products in co-operatives (Hendrikse/ Smit 2007). Similar agent-based modelling could be used in studying other strategy and finance-related issues in collective entrepreneurship such as the comparison of the efficiency implications of limited investment horizons in alternative ownership structures in co-operatives.

Another implication for collective entrepreneurship research is in the area of performance measurement. Complexity Economics theorists posit that the goal of

a company should be to grow and endure. Profit making is viewed rather as a fundamental constraint than a goal in and of itself (Handy 2002). While in the long run both Traditional and Complexity Economics may identify the same companies as successful over time, their critical difference lies in how management teams apply the basic concepts in practice. The objective of maximising shareholder value has been frequently operationalised as "an obsession with the swings in the short-term stock price and quarterly earnings results" (Beinhocker 2006, p. 412). Recent empirical results suggest that this fixation on such short-term goals distorts management decision making since it forces managerial teams to sacrifice economic value for a smooth earnings record (Graham et al. 2005). On the other hand, a management team that focuses on the goals of growth and endurance would adopt amore balanced approach and seek to satisfy the full set of the company's stakeholders (Davis 2005).

Neoclassical approaches to the theory of the cooperative firm assume that co-operatives maximize profits in one or another form. More institutions-friendly methodologies incorporate the diverging or converging objectives of the various co-operative stakeholders (Cook et al. 2003). The contribution of Complexity Economics in this area might be to identify goals in line with the 'grow and 'endure' objective and, subsequently, suggest performance measurements for different types of collective entrepreneurship firms. Such indicators should be based not only on accounting data but also incorporate key information that enables co-operative members to monitor management and the board of directors more efficiently.

This brief discussion of implications suggests that Complexity Economics has a high potential to inform the theory of the co-operative firm and thus to address the challenges facing co-operative leaders as their organisations make the transition toward collective entrepreneurship schemes. Many more implications could be identified. However, the scope of this paper is to provide a brief introduction to these topics that would act as a teaser for other researchers.

4. Conclusions

Despite their significance in the world food and agriculture supply chains, their successful record in addressing market failures, food safety and environmental concerns, and providing local public goods, agricultural co-operatives are facing several organisational and financial challenges. As they attempt to respond to the external pressures of globalisation, free trade, and

industrialisation of agriculture, traditional co-operatives realise the efficiency-robbing constraints imposed on them due to their property rights structure. Those of the co-operatives that have not been demutualised or modified their structure moderately adopted a more radical remodelling approach. The resulting organisational innovation, called collective entrepreneurship, is the joint process by which patron-investors design, finance, and incorporate a path-dependent collective action form of multiple level rent generation (Cook et al. 2008, p. 1). As traditional co-operatives move toward this new institutional arrangement, they are faced with re-emerging as well as new challenges. This paper identifies seven such challenges and uses them as a basis for compiling a research agenda.

Traditional approaches to the theory of the co-operative firm do not leave room for entrepreneurship in their models. This paper suggests that recent developments in economic theory might be useful in exploring the items on the proposed research agenda. In contrast to Traditional Economics, Complexity Economics is built on realistic assumptions and views the economy as an open, dynamic, nonlinear system far from equilibrium.

Several implications of this emerging set of theories for research on collective entrepreneurship are identified. For example, the various types of traditional co-operatives and collective entrepreneurship exist because they are better vehicles for dealing with incomplete contracts and hold-up problems, but also because they enable more efficient collective learning and long-term co-operation. The Complexity Economics approach is also useful in understanding the evolutionary path of co-operatives, addressing strategy-choice issues (e.g., the limited diversification choices of co-operatives due to the single origin constraint), and devising performance measurements that more accurately and clearly reflect the goals of collective entrepreneurship firms. The latter potential of Complexity Economics would enable member patrons to monitor management and the board of directors more efficiently and thus minimise control and influence costs.

This paper proffers an incomplete list of knowledge areas that could be benefited by applying concepts and theories from Complexity Economics. Other issues might also be amenable to such a scholarly exercise. Researchers from several countries have already started exploring additional applications. Fortunately, most of the work lies ahead.

Literature

Aldrich, H. (1999): Organizations evolving, London.

Axelrod, R./ Cohen, M.D. (1999): Harnessing complexity, New York.

Beinhocker, E.D. (2006): The origin of wealth-Evolution, complexity, and the radical remaking of economics, London.

Coase, R. H. (1937): The nature of the firm, in: Economica, 4, pp. 386-405.

Collins, R.A. (1991a): The conversion of cooperatives to public held corporations: A financial analysis of limited evidence, in: Western Journal of Agricultural Economics, 16(2), pp. 326-330.

Collins, R.A. (1991b): Analysis of economic motives for cooperative conversions to corporations, Center for Cooperatives, University of California: Davis, CA, USA.

Cook, M.L. (1995): The future of U.S. agricultural cooperatives: A neo-institutional approach, in: American Journal of Agricultural Economics, 77, pp. 1153-1159.

Cook, M.L. / Burress, M.J./ Iliopoulos, C. (2008): New Producer Strategies: The Emergence of Patron-Driven Entrepreneurship, Paper presented at the XIIth Congress of the European Association of Agricultural Economists, 26-29 August, Ghent, Belgium.

Cook, M.L. / Chaddad, F.R. / Iliopoulos, C. (2003): Advances in cooperative theory since 1990: A review of agricultural economics literature, in: Hendrikse, G.W.J. (ed.): Restructuring agricultural cooperatives, Haveka, the Netherlands, pp. 65-90.

Cook, M.L. / Iliopoulos, C. (1998): Solutions to property rights constraints in producer-owned and controlled organizations: Prerequisite for agri-chain leadership? in: Ziggers, G. W./ Trienekens, J. H./ Zuurbier, P. J. P. (eds.) Proceedings of the Third International Conference on Chain Management in Agri Business and Food Industry, Wageningen, the Netherlands, pp. 541-553.

Cook, M.L. / Iliopoulos, C. (2000): Ill-defined property rights in collective action: The case of US agricultural cooperatives, in: Menard, C. (ed.) Institutions, contracts and organizations, London, pp. 335-348.

Cook, M.L. / Plunkett, B. (2006): Collective entrepreneurship: An emerging phenomenon in producer-owned organizations, in: Journal of Agricultural & Applied Economics, 38(2), pp. 421-428.

Davis, I. (2005): How to escape the short-term trap, in: Financial Times, April 11, London.

Dixit, A.K./ Pindyck, R.S. (1994): Investment under uncertainty, Princeton, NJ.

Graham, J.R. / Harvey, C.R. / Rajgopal, S. (2005): The economic implications of corporate financial reporting, NBER working paper no. 10550, January 11, Washington D. C.

Handy, C. (2002): What's a business for? in: Harvard Business Review, December, pp. 49-55.

Hendrikse, G.W.J./ Smit, R. (2007): On the evolution of product portfolio coherence of cooperatives versus corporations: An agent-based analysis of the single origin constraint, Rotterdam School of Management, ERS-2007-055-ORG, Rotterdam.

Holmström, B. (1999): The future of cooperatives: A corporate perspective, in: The Finnish Journal of Business Economics, 4, pp. 404-417.

Hutchins, E. (1996): Cognition in the wild, Cambridge, MA.

Iliopoulos, C. (2008): Recent advances in solutions to the property rights constraints of traditional agricultural cooperatives, Working Paper AGEPRI-01-08, Agricultural Economics and Policy Research Institute, Athens, Greece.

Iliopoulos, C. / Hendrikse, G.W.J. (2009): Influence costs in agribusiness cooperatives: Evidence from case studies, in: International Studies of Management and Organization, 39(4), Winter 2009/10 (forthcoming).

International Co-operative Alliance (ICA). Statistical information on the co-operative Movement. Available from URL: http://www.ica.coop/members/member-stats.html [accessed on 19 Nov 2008].

Levitt, B./ March, J.G. (1988): Organizational learning, in: Annual Review of Sociology, 14, pp. 319-338.

Mas-Colell, A./ Whinston, M.D./ Green, J.R. (1995): Microeconomic theory, New York.

Merrett, C.D./ Walzer, N. (2001): A survey of new generation cooperatives: Exploring alternative forms of rural economic development, in: Merret, C.D./ Walzer, N. (eds.): A cooperative approach to local economic development, Westport, CT, pp. 91-115.

Nelson, R.R. / Winter, S.G. (1982): An evolutionary theory of economic change, Cambridge, MA.

Simon, H. (1963): Problems of methodology: Discussion, in: American Economic Review: Papers and Proceedings, 53, pp. 229-231.

Srinivasan, R. / Phansalkar, S.J. (2003): Residual claims in co-operatives: Design issues, in: Annals of Public and Cooperative Economics, 74(3), pp. 365-395.

Staatz, J.M. (1987): Farmers' incentives to take collective action via cooperatives, in: Royer, J. S. (ed.): Cooperative Theory: New Approaches, USDA, ACS Service, Washington, D.C., pp. 87-107.

United States Department of Agriculture (USDA): Number of cooperatives and memberships by major economic activities 2006. Available from URL: http://www.rurdev/usda.gov/rbs/coops/data.htm [accessed 19 Nov 2008].

Valentinov, V. (2007): Why are cooperatives important in agriculture? An organizational economics perspective, in: Journal of Institutional Economics, 3, pp. 55-69.

Vitaliano, P. (1983): Cooperative enterprise: An alternative conceptual basis for analyzing a complex institution, in: American Journal of Agricultural Economics, 65, pp. 1078-1083.

Wiggins, R.R./ Ruefli, T.W. (2002): Sustained competitive advantage: Temporal dynamics and the incidence and persistence of superior economic performance, in: Organization Science, 13, 1, pp. 81-105.

Williamson, O. E. (1996): The mechanisms of governance, New York.

Wright, R. (2000): Non zero: The logic of human destiny, New York.