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Post-communist Transformation in Bulgaria – Implications for Development of Agricultural Specialization and Farming Structures

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Abstract

This paper incorporates a new inter-disciplinary methodology of the New Institutional and Transaction Costs Economics, and examines pace, factors and modes for post-communist agricultural specialization and farming structures development in Bulgaria. Firstly, it presents the specific Bulgarian model for farming transformation characterizing with restitution of farmland in real borders and original locations, physical distribution of assets of ancient public farms into individual shares, rapid liberalization of markets and prices, and lack of public support to agriculture. Secondly, it specifies factors for evolution of new farm structures and specialization such as badly specified and enforced property rights; big institutional, market and behavioral uncertainty; high assets specificity and dependency; lack of managerial experience; low incentives for long-term investment; ineffective public interventions etc. Next, it demonstrates how these factors affect organization and specialization of farming in the country explaining the evolution of a huge subsistence and part-time farming, production cooperation at a large scale, unprecedented concentration of resources in few business farms, widespread use of informal and integrated modes etc. Forth, it analyzes the impact of transition on farm structures and agricultural specialization through changes in structure and share of agricultural GDP and employment, and distribution of activities between different types of farms. Finally, it clarifies efficiency of and extent of specialization in dominating large business farms, production cooperatives, and numerous small-scale unregistered farms.

Key words: *agricultural specialization, farm governance, transaction costs, comparative institutional analysis, Bulgarian agriculture*

I. Introduction

Since the collapse of Communist system in 1989 Bulgarian agriculture has gone through an unprecedented transformation from a centrally planned to a market based private economy. The fundamental transition has affected significantly agricultural specialization and farming structures (Bachev and Tsuji, 2001; Bencheva, 2005; OECD, 2000). The unique post-communist ‘Bulgarian experience’ gives an extraordinary opportunity to study evolution and factors of agricultural specialization. However, there are no comprehensive studies on agricultural specialization during that most recent period of development.

The goal of this paper is to fill the gap and examine modes and factors of post-communist agricultural specialization and farming structures development in Bulgaria. We incorporate an inter-disciplinary methodology of the New Institutional and Transaction Costs Economics based on contributions of Coase (1937), Furuboth and Richter (1998), North (2000), and Williamson (1996). Firstly, we outline the framework for analysis of economic specialization in transitional agriculture. Next, we present features of Bulgarian model of farming transformation, specifying factors for development of farming structures and

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specialization, and impacts on agricultural specialization. *Finally*, we analyze specific governance and specialization in dominating business farms, cooperatives, and unregistered farms. The study is based on official (statistical, census etc.) as well as original data collected from managers of ‘typical’ farms in all major regions. The survey was carried out in 2003 during the last Agricultural Census and covers 194 farms of different types (0,5 percent of the commercial farms in the country). Thirty eight percent of surveyed farms are unregistered ‘individual, family, or group farms’, almost twenty nine percent are ‘cooperatives’, and one-third has a status of ‘firm’.

II. New Institutional Economics framework

The New Institutional Economics let us better understand ‘logic’ and driving factors of agricultural specialization and farming structures development (Bachev, 2004; Masten, 1991; Sporleder, 1992).

A potential to increase *productivity* gives incentives for division and specialization of labor². In agricultural production specialization could be on a particular *product(s)* (crop, livestock, fruits, cereals, milk, meat-cattle, organic honey) or a specific *function(s)* (management, mechanization, plant protection, harvesting, guarding, risk taking, marketing). Specialization of labor inevitably requires *coordination* of specialized activity and *exchange* (of products, resources, rights) between individual agents. *The governance* (coordination, stimulation) of specialization and exchanges of individuals could be done by *free market* (price-movements, private negotiations), *whiting a private organization* (by a manager, collective decision-making), and/or by *a third party* (e.g. state authority).

If *transaction costs* were zero³ then all modes of governance (market, contract, family farm, partnership, cooperative, nationwide hierarchy) would have *equal efficiency*. Then the *type* and *extend* of specialization would depend only on *technological factors* - potential to economize on production costs, explore economies of scale/scope, increase productivity, and profit from mutually beneficial exchange. However, when transaction costs are positive then the ‘*governance matters*’ and have a significant impact on evolution of agricultural specialization and exchange. For instance, when a farmer integrates ‘mechanization service’ (buying a tractor and hiring a tractorist) instead of supplying it from market, the economic benefits are not (only) technological (savings on production costs). The internal mode for governing of activity (specialization) often has substantial transaction costs advantages – economizing costs for finding best prices and suppliers, and for negotiating conditions of exchange; diminishing market uncertainty and risk from outside dependency etc.

There are a great *range of specializations* of agricultural activities within internal organizations and/or across markets. In one extreme, a high level of outside transaction costs could restrict development of specialization in small-scale subsistence farming or caused multi-product integration into large member-oriented cooperatives. In another extreme, a specialized (in management) farm entrepreneur could carry out the entire production activity purchasing all related services (tilling, watering, fertilizing, plant protection, harvesting) from specialized markets⁴. Which mode for governing of a particular type of activity will dominate depends on *comparative efficiency* (advantages, disadvantages) of alternative forms.

The ‘rational’ agrarian agent would tend to choose the *most efficient mode(s)* for governing relations with others – that one which allow achieving maximum productivity

² Higher productivity could be also achieved through *cooperation* of labor.

³ Transaction costs are ‘costs for protection and exchange of property rights’ (Furuboth and Richter, 1998: 101).

⁴ This is not a hypothetical but a typical for a good part of Japanese rice farming case.

(benefits) while minimizing *total* production *and* transaction costs⁵. According to the individual's *personal* characteristics (skills, ability) and the specific *institutional, market* and *natural* environment there will be *different* efficient forms for governing of farming activity. For instance, in transitional economies property rights were not well defined and enforced, individuals had little managerial experience and face significant institutional, market, and behavioral uncertainty. In these conditions subsistence (semi-market) household holdings and large integrated cooperatives and agri-firms happened to me the most effective forms of farming organization (Bachev, 2004: 140). In the former case, the high transaction costs restricted agricultural specialization and farm size far below the technological opportunities (potential for growth in productivity). In the later case, the huge potential for transacting benefits extended enormously internal specialization and (horizontal and vertical) borders of farms beyond technological determinants.

Following this new framework farm is to be studied as a *governance* structure with consumption, production, and transaction optimization functions (Bachev, 2004: 139). Furthermore, in order to explain evolution of diverse modes of specialization and distribution of activities between different farming organizations we have to analyze *structure of agrarian transactions* and associated transacting costs. Since much of the transaction costs are hardly to quantify the analysis is to concentrate on their '*critical factors*' – *institutional* (structure of formal and informal property rights and system of their enforcement), *behavioral* (agents bounded rationality, tendency for opportunism, risk aversion, reputation consideration), *dimensional* (frequency, uncertainty, assets specificity, and appropriability of transactions), and *technological*.

Next, in order to assess the *extend of specialization* of different farms we have to examine modes for governing of labor supply, service supply, inputs supply, land supply, finance supply, and marketing of output. For instance, intensified outside trade (inputs and service supply, marketing of farm produce) is an indicator for increased market specialization while on farm organization of additional labor (own production of inputs and 'services', internal utilization of outputs) is a sign for deepen internal specialization. What is more, 'full' efficiency of individual forms could be only understood in the context of governance of the *entire* farm. For example, effective extension of livestock farm could be done though new 'specialization' (e.g. production of forage for own animals though leasing in farmland and hiring crop labor) rather than pure enlargement of 'specialized' livestock operations (buying more forage from market, hiring additional livestock workers, selling more livestock products).

Finally, for evaluation of proper efficiency of diverse forms for agrarian organization the analysis is to embrace their *comparative* efficiency and *complementarities* as well as the larger *household* and *rural* economy. For instance, low productive multi-product cooperatives proved to be an effective form for governing of specialization and exchange in transitional countries with widespread small-scale and subsistence farming (Bachev, 2004: 141). On the other hand, a 'less' effective form of agricultural specialization such as part-time farming turned to be an essential part of households specialization (economy) in transitional conditions of high unemployment, great insecurity, and significant food costs.

⁵ Often there is a *trade-off* between increasing productivity (through extension of specialization) and additional governing costs for coordination and exchange.

III. Bulgarian model for farming transformation

During the Communist period (1944-1989) Bulgarian farming was carried out in large public farms averaging thousands hectares and up to 6000 employees. Private ownership on major agrarian resources and market exchanges were abandoned. Public farms were responsible for food supply of local communities producing a broad range of farm and processed products. There were high functional and subject specialization of farms divisions and labor. Most activities (specialization and exchange) were governed by a Central Plan through an overcrowded multilevel hierarchical organization (reaching up to thirty percent of agricultural employment). There were many reorganizations (Table 1) and experimentations with 'economic mechanisms' aiming at improving efficiency. Nevertheless, up to the collapse the socialist model the deficiency in incentives and productivity prevailed while most farms resources and production structure rested under state control. Since 1970s small 'private' farms were allowed mostly for food self-supply of households. Despite small size these 'personal plots' provided a major part of certain produce - maize, potatoes, eggs, meat, honey, tobacco, fruits and vegetable (National Statistical Institute).

Table 1: Development of farming structures in Bulgaria

Type of farms	Communist period						Transition		
	1944	1958	1969	1977	1985	1989	1995	2000	2005
Private farms (000)	1100	330	-	na	1600	1600	1772	755.3	515.3
Average size (ha)	3.9	2.6	-		0.4	0.4	1.3	0.9	1.8
Cooperatives	110	3200	795	-	-	-	2623	3125	1525
Average size (ha)	241	1264	4140				800	709.9	584
State farms	-	49	159	-	-	-	1002	232	-
Average size (ha)		3426	4040	-			338	358	
Agro-industrial complexes	-	-	-	143	298	-	-	-	-
Average size (ha)				32833	12600				
Collective farms	-	-	-	-	-	2101	-	-	-
Average size (ha)						2423			
Agro-firms	-	-	-	-	-	-	n.a.	2200	3704
Average size (ha)							n.a.	300	249.4

Source: National Statistical Institute

Following 1991 reform all forcefully 'cooperated' or nationalized farmland was restituted to previous owners. Complex land transformation was implemented which took almost ten years to complete affecting eighty five percent of agricultural land and turning a three-quarter of households into owners of farmland. Ancient cooperatives and other organizations established on their bases were liquidated and their assets distributed into individual shares. Liquidation took more than four years and made more than two million Bulgarians owners of small stakes in assets of ancient public farms.

Fundamental transformation of the economy was also carried out liberalizing markets, privatizing public enterprises, introducing EU institutions and standards. Economic reforms released market competition and introduced strong incentives for private entrepreneurship. More than 1,9 million private farms emerged on provisional or entirely restored private rights of lands and agrarian assets. By 1995 almost all agricultural activities (and specialization) were governed by entirely new market and private structures. Previous model of agricultural specialization within large public farms and a nationwide hierarchy was replaced by a capitalistic system of private entrepreneurship (private order) and free market mechanisms.

IV. Factors for development of farming structures and specialization

Specific type and pace of privatization of agrarian resources and big transitional uncertainty had important consequences for the development of farming organization in the country.

Firstly, prolonged lack of full ownership on agrarian resources restricted feasible forms for their effective organization. Sells and long-term lease markets for farmland did not emerge until 2000 and annual lease was a major way for farm extension. Agrarian agents were unable to get full return on proprietary rights or use land ownership for setting up sustainable coalition and organization of other transactions (e.g. collateral against credit). On the other hand, unspecified or ideal character of ownership let rapid consolidation of fragmented farmland under management of small number of huge market oriented enterprises (Table 2). Thus governance of significant share of agrarian activities and specialization has been done within integral organizations rather than market competition.

Table 2: Share of different farms in total holdings and major resources in Bulgaria

Indicators	Physical persons	Cooperatives	Sole traders	Companies	Associations
Number of holdings with farmland (%)	99.0	0.3	0.4	0.2	0.05
Share in Utilized agricultural area (%)	30.3	40.3	11.7	16.1	1.6
Average size (ha)	1.4	592.6	118.8	352.5	126.2
Number of breeders without land (%)	96.1	0.2	1.9	1.7	0.1
Share in workforce (%)	95.5	1.2	0.8	1.4	0.3
Share in labor input (%)	91.1	4.1	1.4	2.8	0.6

Source: MAF, 2005

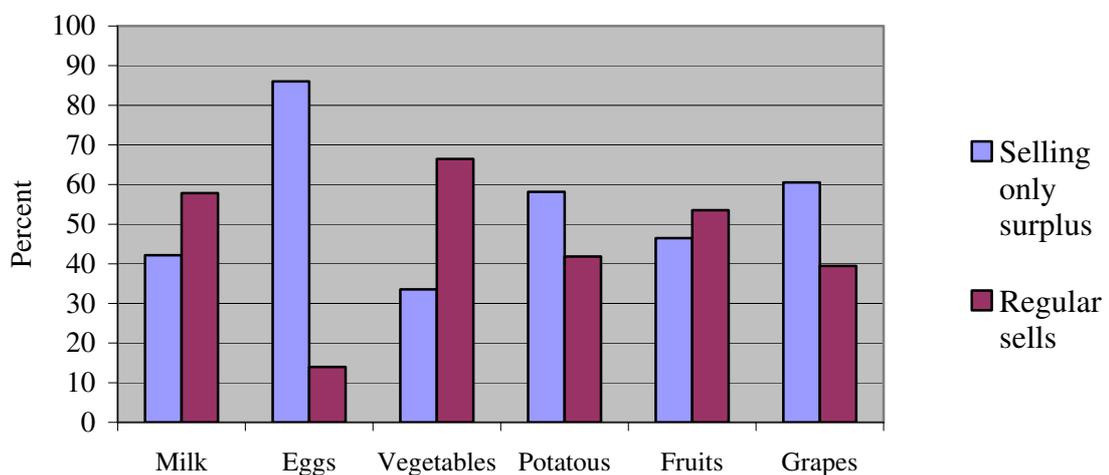
Secondly, internal organization of available household resources in own individual or family farm was an effective way to overcome a great institutional and economic uncertainty and minimize transacting costs. During much of the transition market and contract trade of household's capital was either impossible or very expensive - missing markets situation, high uncertainty and risk, asymmetry of information, big possibility for opportunism in time of hardship. Many lost their jobs as result of restructuring of public companies. Low payoff of outside trade was combined with an increased share of households' food costs. Internal organization turned to be most effective way to protect and get return on resources, and secure stable income for households. A long-term tradition with 'personal plots' from the Communist period, and insignificant costs for acquiring specialized knowledge made development costs for own farm accessible for everybody regardless previous occupation. Own production has been effective mode to guarantee cheap, stable and high quality delivery of food, provide employment for family members, or be favorable free-time occupation.

That is how a huge subsistent and part-time farming emerged affecting a considerable part of households. Miniature (full time) specialization of unemployed/retired persons or (part-time) diversification into farming of engages in other businesses took place. Even now full-time employed in the sector accounts for eleven and a half percent of all workers in the country (National Statistical Institute, 2005). In addition, almost one million Bulgarians are involved in farming on a part-time base as 'supplementary' income source. Estimates in Annual Work Units (AWU) show that agriculture comprises more than 26 percent of the overall employment (MAF, 2006). Labor contributed by part-time workers reaches fifty tree percent of AWU of the sector.

Now more than three-quarters of farms are less than one ha, averaging a half ha. More than ninety seven percent of livestock holdings are unprofessional farms having few heads but breeding ninety six percent of goats, eighty six percent of sheep, seventy eight percent of cattle, and sixty percent of pigs. More than ninety percent of farms are less than two European Size Units⁶, and generally considered as subsistent and semi-subsistence farms. In livestock grazing and mix orientation later bring considerable share of Standard Gross Margin in respective groups (MAF, 2005).

Within small farms no labor specialization is practiced or it is carried out between few family members. Most farms are not specialized for market rather aim at serving diversified food needs of households producing a great range of crop and livestock products. For vegetables, fruits, vine and livestock a significant portion of the overall national output is for own consumption (MAF, 2005). A great fraction of farms sells out only surpluses for major commodity products (Figure 1). For Physical Persons the number is higher as less than thirty nine percent of farms report they sell products and for more than fifty percent those are surpluses not consumed by households (MAF, 2005).

Figure 1: Share of farms marketing products in Bulgaria



Source: MAF, 2005

Third, most agrarian agents found their skills (previous specialization, team working tradition) and portions in acquired agrarian resources in a high interdependency. A great part of individuals' shares in ancient public farms were in indivisible assets - large machinery, buildings, irrigation facilities. For later there were no any alternative but liquidate (through sales, consumption) or keep them up as a joint (cooperative) ownership. In many cases, 'new' land owners got restituted their plots with fruit trees, vineyards etc., and they could practically execute much of activities in a cooperation. Most land and share-holders happened to live away from rural areas, or have other business, or be old of age, or have no skills or capital to start own farms. In absence of big demand for farmland and confidence in emerging new private modes, the only option was to joint a cooperative. That is how more than 40 percent of new owners pulled their free land, assets, and labor in new production cooperatives. Similarly, most privatized state farming and livestock companies were taken-over by 'managerial-workers' teams and registered as Shareholder Companies and Associations keeping previous (internal and market) specialization.

⁶ One European Size Unit = 1200 Euro.

Forth, there was no or little experience in managing private or collective farms in majority of new entrepreneurs. Moreover, there has been lack of public support in farming training, advisory service and funding (Bachev, 2006: 143). That has been coupled with a strong competition with heavily subsidized foreign producers at local and international markets alike. As result there has been massive failures, take-overs and ceasing commercial activities of a good number of newly evolving farms. Comparing to 1994 pick the amount of farms decreased with seventy two percent in 2005. Therefore, considerable portion of agrarian activity and resources has gone through several governance structures or got out of productive uses. That little sustainability of farming structures has got significant implications for the extension of agricultural specialization.

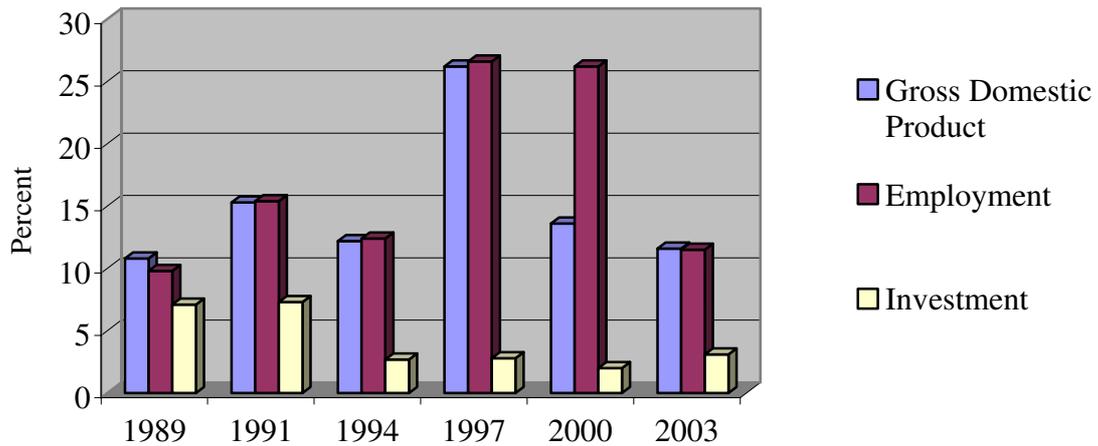
Fifth, there have been low incentives for a long-term investment in specialized and specific capital in most farms (Figure 2). That has deterred development of specialization both within farms and across markets. For long time significant portion of agrarian resources were governed by ineffective “temporary” structures (Privatization Boards, Liquidation Councils etc.) with no interest in long-term productivity. In conditions of high instability and uncertainty the sustainability and investment activity of commercial enterprises is low (Bachev, 2006:137). Moreover, much of farming related investment are highly specific and can hardly be funded by outside credit or equity sells (Bachev, 2006: 137). Majority of small-scale commercial farms are run by older generation entrepreneurs with a short business (investment) perspective⁷. Almost all farmland of large business farms has been supplied by provisional lease-in contracts. While there have been strong investments in mobile material assets there has been no long-term investment for improving land productivity (renovation of orchard, vineyard, irrigation facilities; compensating N, P and K intakes). Most cooperatives has been mismanaged or experienced significant funding problems because of different investment preferences of members (Bachev, 2006: 142). As far as subsistence farming is concerned it does not necessitate significant investment since households demand is stable.

V. Impact of farming transformation on agricultural specialization

Post-communist transformation of agriculture has increased farming importance in national economy both in terms of contribution to the Gross Domestic Product and employment (Figure 2). Comparing to 1989 agricultural employment increased by twenty percent as its share in overall employment doubled. Therefore, overall agricultural specialization expanded as more people find work and income in this sector of national economy. On the other hand, seventy five percent of employed in farming are engaged on part-time bases indicating domination of primitive (rather that complete) forms of agricultural specialization (less specialization of labor, less exchanges).

⁷ Managers older than forty five and sixty five are eighty five percent and forty percent accordingly (MAF, 2005).

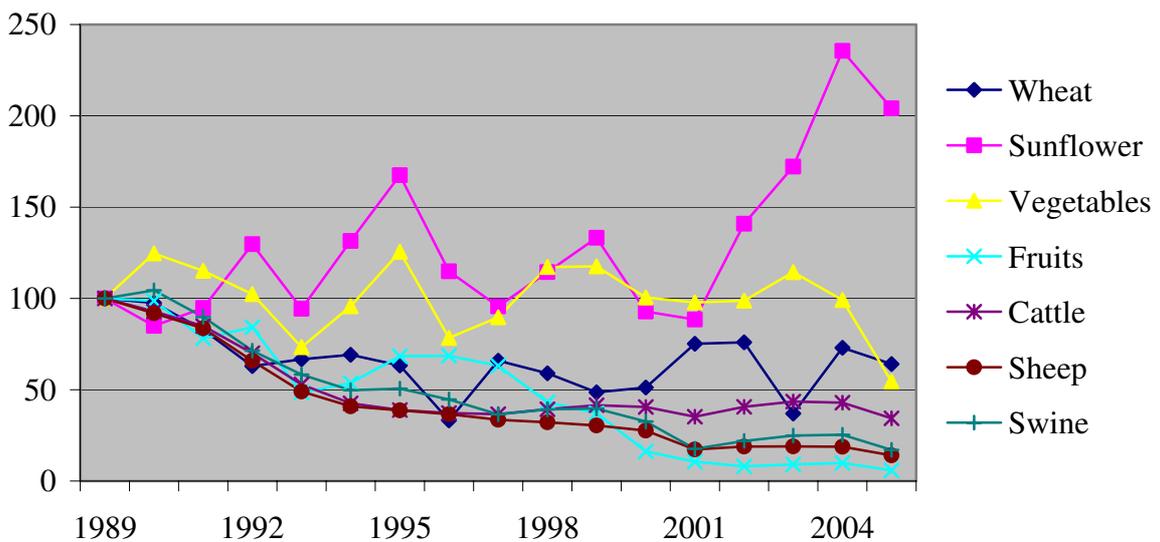
Figure 2: Share of Bulgarian agriculture in national economy



Source: National Statistical Institute

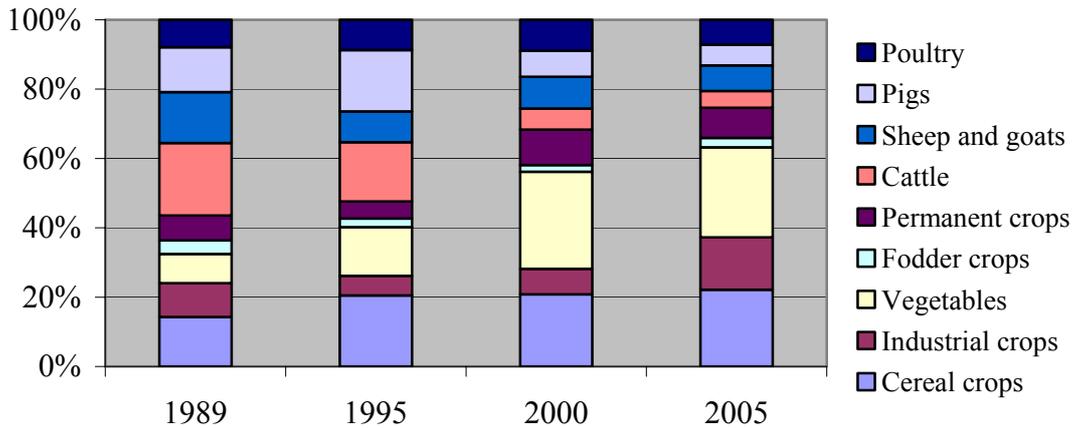
Post-communist market adjustment and farm adaptation has been associated with alteration of production structure and a general decline in agricultural output (Figure 3). There has been a significant change in general product specialization and importance of different sub-sectors (Figure 4). Livestock lost its dominant pre-reform share melting down to twenty six percent of the Gross Agricultural Product (GAP). While poultry maintains its segment, cattle, sheep and goat, and pigs portions dropped considerably. At the same time, vegetables have seen its share significantly augmented expanding from the sixth to the largest contributor to GAP. Cereals and industrial crops also extended being the second and the third most important productions.

Figure 3: Dynamics of major agricultural productions (1989=100)



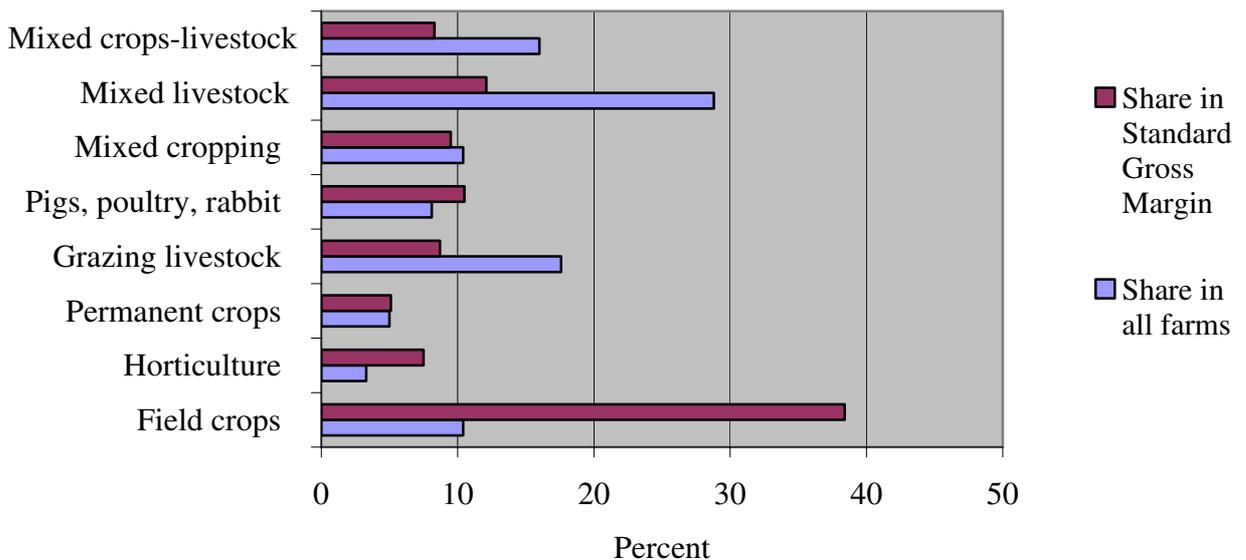
Source: National Statistical Institute

Figure 4: Composition of Gross Agricultural Product in Bulgaria



Source: National Statistical Institute

Figure 5: Share of farms with different specialization and contribution to Standard Gross Margin of agriculture



Source: MAF, 2005

Newly evolving farming structure is characterized with entirely different type of specialization comparing to the pre-reform period. A sizable share of farms produces large number of different products. Only in cereals, oil plants, aromatic and medicinal crops production is more specialized. A fraction of specialized livestock farms (big operators) is insignificant. While different ‘mix farms’ and primitive ‘grazing animal farms’ comprise a bulk of the farms, specialized farms of various kinds produce the greatest part of Standard Gross Margin (SGM) of the sector (Figure 5). Larger commercial farms (bigger than two ESU) with different type of specialization contribute most to SGM in all groups of specialization. A tiny number of all farms in permanent crops (zero point three percent), field crops (one point six percent), pigs and poultry (zero point two percent), horticulture (zero point fourth percent), and mix cropping (zero point twenty five percent) are bigger than

hundred ESU but they produce a significant share of SGM in these groups – sixty three percent, fifty four percent, fifty four percent, twenty six percent, and twenty eight percent accordingly (MAF, 2005).

VI. Governing and specialization of business farms

Our survey has found out that agro-firms are commonly large specialized enterprises. Most of these firms were set up as family/partnership businesses during first years of transition by younger generation entrepreneurs. Specific management skills and social status, and combination of partnership assets (technological knowledge, business ties, available resources) led to a rapid extension of farms through enormous concentration of management/ownership of resources, specialization and exploration of economy of scale/scope, and modernization of enterprises (Bachev, 2006: 136). Institutional uncertainty, unsettled rights on assets, personal relations and ‘quasi’/entirely integrated modes were extensively used to overcome transaction difficulties. Number of agro-firms has increased 20 folds since 1990 and doubled since 2000 as their share in overall resources augmented (National Statistical Institute).

Business farms are profit-oriented organizations, and farmer(s) have great incentives to invest in farm-specific (human, material, intangible) capital because they are sole owners of the residual rights (benefits) of farm. Owners are family members or close partners, and internal transaction costs for coordination, decision-making, and motivation are not high. Organizational style of *firm* is preferred since it provides opportunity to overcome coalition difficulties (joint ventures with outside capital, dispute rights through court); diversify into farm related/independent businesses; develop firm-specific intangible capital (advertisement, brand names, public confidence) and its extension into a daughter company, trade and transfer through generations; overcome existing institutional restrictions (e.g. direct foreign investments in farmland and engaging in trade with cereals/vine/dairy); provide explicit rights for taking part in particular types transactions (e.g. licensing, privatization deals, public programs).

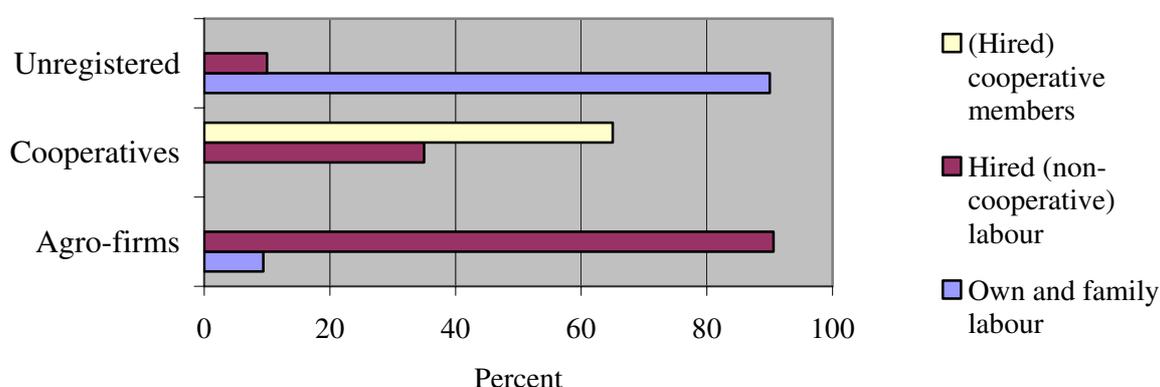
The large size and reputation make business farms preferable partners in inputs supply and marketing deals. Recurrence of transactions with same partners is high which restricts information asymmetry and opportunistic behavior, and develops mutual trust and other mechanisms for facilitating (lowering costs of) relationships – planning, adjustment and payment modes, guarantee schemes, dispute resolution devices. Agro-firms have giant negotiating power and effective economic, political etc. mechanisms to enforce contracts. They possess a great potential to collect market information, search for best partners, use experts and innovation, meet special (collateral) requirements and bear risk and costs of failures. They could explore economy of scale/scope on production and management (‘package’ arrangement of credits for many projects and interlinking inputs supply with know-how supply/crediting/marketing). They are also able to invest considerable relation-specific capital (information, expertise, reputation, lobbying) for dealing with funding institutions, agrarian bureaucracy, and market agents at national or international scale.

Under conditions of non-working court and contract enforcement systems, all critical farm transactions are governed (controlled/protected) through internal modes. Farm-specific assets such as critical machinery, vineyards, orchards, animals, processing facilities, and adjoining land, are all safeguarded by ownership mode. Low cost standard (one-season, share rent) lease-in contracts are widely used to govern land supply from tens/hundreds of proprietors.

‘Critical’ transactions are integrated through extensive labor employment (Figure 6). Preference to ‘own making’ (internal specialization and organization of activity) rather than

market procurement (buying specialized inputs and services across market) is determined by transaction costs economizing reason - the high farm specificity and/or uncertainty associated with certain transactions. Besides, core labor (specialists, mechanists) is hired on a permanent basis and special forms such as output-based compensation, interlinking (housing, services), social disbursements, paid holidays are further used to enhance motivation. Furthermore, in large business farms it is typical strong internal division and specialization of labor - both functional (management, production, marketing, security) and subject (crop, livestock, services). Nevertheless, in farming hired (non-family) labor command high transacting costs for directing, supervising, protecting opportunistic behavior, disputing. Therefore large business farms are mostly specialized in less labor consuming, highly intensive and standardized productions (cereals, sunflower, aromatic and medicinal plants, poultry, and pigs) where control of labor is easy or output based compensation could be effectively applied (Table 3 and 4). These farms are also a major provider of mechanization services to other farms.

Figure 6: Governing of labor supply in Bulgarian farms



Source: survey data

Table 3: Distribution of crop productions in each type of farms (percent)

Productions	Unregistered Farms		Cooperatives Farms		Sole traders Farms		Companies Farms		Associations Farms	
	Farms	Area	Farms	Area	Farms	Area	Farms	Area	Farms	Area
Cereals	51,1	59,5	93,0	59,7	54,3	62,3	55,1	61,1	51,1	56,0
Dry pulses	13,0	0,8	5,7	0,6	5,9	0,6	3,6	0,5	5,9	1,1
Oil crops	5,1	17,8	74,4	28,6	28,9	29,7	41,6	27,0	28,2	26,0
Textile crops	0,0	0,0	1,0	0,2	0,1	0,0	0,4	0,2	0,5	0,2
Aromatic and medicinal plants	0,5	1,7	17,6	2,5	4,8	1,9	12,8	4,4	6,7	5,6
Forage	28,6	7,5	29,6	3,1	21,2	1,2	14,0	1,7	23,4	7,5
Vegetables	49,2	5,5	8,3	0,2	29,2	0,5	11,9	0,4	21,2	0,4
Fruits	8,7	2,0	14,7	0,9	11,4	0,3	12,2	0,7	35,2	9,5
Total	100	100	100	100	100	100	100	100	100	100

Source: MAF, 2005

Table 4: Distribution of livestock productions in each type of farms (percent)

Productions	Total	Unregistered	Cooperatives	Sole traders	Companies	Associations
Cattle	31,8	32,0	13,1	18,8	11,3	22,8
Buffalo	0,4	0,4	0,2	0,5	0,7	0,8
Goats	40,4	40,8	0,5	14,7	2,9	6,5
Sheep	35,7	36,0	5,0	17,1	6,3	13,7
Pigs	41,9	42,1	3,6	29,9	15,1	20,4
Poultry	74,3	74,8	1,2	43,2	13,2	15,3
Total	100	100	100	100	100	100

Source: MAF, 2005

Table 5: Governing of service supply in Bulgarian farms (percent of farms)

Service type	Modes	Unregistered	Cooperatives	Agro-firms
Technological knowledge and advises	Own supply	24	49	65
	Own cooperative	5	7	15
	Market supplier	13	10	25
Mechanization services	Own supply	18	85	60
	Own cooperative	22	0	18
	Market supplier	15	15	28
Spreading chemicals and pesticides	Own supply	40	65	60
	Own cooperative	15	7	12
	Market supplier	12	25	28
Veterinary services	Own supply	20	60	40
	Own cooperative	5	0	0
	Market supplier	40	40	60

Source: survey data

Table 6: Governing of inputs supply in Bulgarian farms (percent of farms)

Inputs type	Supplier	Unregistered	Cooperatives	Agro-firms
Chemicals	Own production	17	0	0
	Own cooperative	10	5	15
	Market supplier	55	95	90
	Buyer of farm output	24	13	33
Seeds and seedlings (crop farms)	Own production	47	53	33
	Own cooperative	3	15	23
	Market supplier	50	32	45
	Buyer of farm output	4	41	44
Forage (livestock farms)	Own production	55	65	50
	Own cooperative	0	0	35
	Market supplier	45	35	15
	Buyer of farm output	9	6	53
Machinery	Own production	12	13	0
	Own cooperative	20	17	46
	Market supplier	68	70	54
	Buyer of farm output	15	0	19
Livestock	Own production	37	50	28
	Own cooperative	21	31	33
	Market supplier	42	19	39
	Buyer of farm output	40	17	13

Source: survey data

Principally, own supply ('making') rather than outside procurement ('buying') is common for essential services and inputs (Table 5 and 6) which prevents risk from unilateral dependency (opportunism of supplier) or missing market situation. In the case of high asset interdependency with downstream partners (product specificity; quality/quantity dependency) reciprocal supply of 'inputs against marketing' is applied.

Our survey has found out that funding is secured through an effective combination of equity, debt, public and hybrid modes. Standard activities/assets are financed by bank credit since it is easy to arrange a loan. Alternatively, farm-specific investments are financed through private modes - own sources, 'personal' loans and co-investment. Special contract modes are used to mitigate funding difficulties (shortage of working capital) or facilitate mutually-dependent relations with buyers/suppliers such as delayed payments for inputs supply (zero interest, loans in kind), interlinking credit with inputs supply and marketing, leasing or accepting outside investment ('hostage taking', joint ownership) of long-term assets. Agro-firms are also quite successful in recently introduced public support programs (e.g. EU Special Assistance Programme for Agricultural and Rural Development) developing good proposals, meeting formal requirements, dealing with complicated paper work, and 'arranging' selection of projects.

Table 7: Governing of marketing in Bulgarian farms (percent of farms)

Output	Modes	Unregistered	Cooperatives	Agro-firms
Grain	Own cooperative	9	7	9
	Another farm/firm	50	85	75
	Processor	25	39	37
	Retail	6	7	16
Vegetables	Own processing	0	0	15
	Another farm/firm	24	24	35
	Wholesale market	6	5	15
	Processor	38	66	30
	Retail	12	0	6
Fruits and grape	Own processing	15	7	19
	Own cooperative	24	7	9
	Another farm/firm	48	39	32
	Wholesale market	0	22	22
	Processor	15	36	25
	Retail	6	0	0
Meat	Own processing	0	10	15
	Another farm/firm	65	71	80
	Processor	29	43	30
	Retail	15	36	20
Milk	Own processing	0	10	15
	Another farm/firm	42	43	40
	Processor	51	64	45
	Retail	19	0	15

Source: survey data

In marketing of farm output and services a classical trade across market (wholesale market; business with market agents) dominates (Table 7). Main part of farm's product has standardized (commodity) character and market prices/competition effectively governs relations with partners. When specificity of output to a particular buyer (processor, retailer) is high (technology, quality, time of delivery, site-specificity) then delivery contracts with the respective partner are employed to tailor or protect transactions. Here division of labor and

specialization in vertical chain is governed by a private order rather than classical market competition. Intra-firm processing and retailing is also practiced by some farms. That further extends farm boundaries through internal organization and specialization of interdependent activities. Larger operational size and frequency of transacting provide an economic opportunity for internal exploration of interdependent assets (farming-processing-retailing). Vertical integration helps protect dependent investments and payoffs from marketing of processed products - getting full profit, brand name trade, lessened market dependency (easy storage, transportation).

VII. Governing and specialization of production cooperatives

Cooperatives are the biggest farms in terms of land and labor management (Table 2). Coops concentrate a major part of cereals, oil and forage crops, orchards and vineyards, and they are a key service providers for their members and rural population.

The cooperative was the single most effective form of organization in the absence of settled rights for main agrarian resources and/or inherited high interdependence of available assets (restituted farmland, acquired individual shares in the actives of old cooperatives, narrow specialization of labor) (Bachev, 2006: 141). Moreover, most cooperatives developed along with small-scale and subsistent farming. Namely, 'not-for-profit' character and strong membership (rather than market) orientation attracted many households. As for production, the coop was perceived as effective (cheap, stable) form of supplying highly specific to individual farm inputs and services (feed for animals; mechanization; storage, processing, and marketing of output) as well as food for households. The cooperative, rather than other formal collective (e.g. firm) forms, has been mostly preferred. Coops were initiated by older generation entrepreneurs and tradition has played a role. Besides, this mode allows individuals an easy (low cost) entrance and exit keeping control over a major resource (land) and permitting a democratic participation in and supervision over management. In addition, cooperative form provides some important tax advantages (exemption from sale transactions with members, and received rent in kind) and possibilities for organizing transactions that are not legitimate for other modes (e.g. credit supply, marketing, and lobbying nation-wide).

Larger operational size gives cooperatives a great opportunity for efficient use of labor (teamwork, division and specialization of work), farmland (cultivation in big consolidated plots, effective crop rotation), and material assets (exploration of economy of scale/scope of large machinery). In addition, they have a superior potential to minimize market uncertainty ('risk pooling', advertisement, storing, integration into processing and marketing), and organize critical transactions (access to credit; negotiating positions in input supply and marketing; facilitate land consolidation through lease-in and lease-out deals; technological innovations), and invest in intangible capital (reputation, labels, brand names).

Cooperative activities are not difficult to manage since internal (members) demand for output and services is known and 'marketing' secured. In addition, coops concentrate on few highly standardized (mass) products with stable market and profitability. All these assists financing: advance funding of activities commissioned by members is commonly practiced, while production of universal commodities is easily financed by public programs or commercial credit. Furthermore, coops offer low-cost long-term leasing of land. That is often coupled with simultaneous lease-out deals as a specific mode for cashing coops output or facilitating relations between landowners and private farms. The integral organization of critical 'services' and inputs supply is broadly practiced. Output-based payment of labor is common, which restricts opportunism and minimizes internal transaction costs. Besides, cooperatives provide employment for members who otherwise would have no other job opportunities - housewives, pre- and/or retired persons. They are preferred employers since

they offer higher job security, social payments, paid holidays etc. Marketing risk is governed by effective delivery contracts or integrated into own processing. In a situation of ‘missing markets’ in rural areas, the cooperative mode is also the single form for organizing important activities such as bakeries, wholesale, retail trade etc. Given considerable transacting benefits, most coop members accept lower than market returns on their resources - lower wages, inferior or no rent for land and dividends for shares.

There have been some adjustments in size of coops, memberships, and production structure. Number of them have moved toward corporate (‘new generation’) type of governance, applying profit-making goals, closed-membership policies and joint-ventures with other organizations. At the same time, cooperatives show certain disadvantages as form for farm organization. Large coalition makes individual and collective control over management very difficult (costly) providing possibilities for mismanagement (on-the-job consumption, unprofitable members’ deals). Besides, there are differences in investment preferences of the diverse members (old-younger; working-non-working; large-small shareholders) due to the non-tradable character of cooperative shares (‘horizon problem’). Given the fact that most members are old in age, small shareholders, and non-permanent employees, the incentives for long-term investment in cooperatives have been very low. Finally, many coops fall short adapting to diversified (service) needs of members and exploring potential of inter-cooperative modes. Accordingly, cooperatives’ long-term efficiency diminishes considerably in relation to market, contract and partnership modes, and almost forty percent of coops have gone bankrupt or ceased to exist in last five years.

VIII. Governing and specialization of unregistered farms

Majority of commercial farms are ‘unregistered farms’⁸ which are mainly in labor-intensive productions (vegetables, tobacco, vineyards, berries, melons, flowers, mushrooms, medicinal and aromatic crops, livestock, sericulture, bee kipping) and natural meadows. Those are predominately individual or family holdings, and farm size is exclusively determined by available household resources – farmland, labor, finance. Internal governing costs are insignificant since transactions are between family members (common goals, high confidence, and no cheating behavior dominates) or not existing at all (one-person farm). Small collective organization is also practiced for some production activities which allows a partial exploration of economies of scale or make a part-time farming practically possible. The former mode is cost-effective since transactions are not complicated and easily controlled. Group members are usually close friends, neighbors, or relatives, and mutual trust and self-restriction of opportunism govern relations.

Commercial farmers have strong incentives to adapt to market demand and increase productivity (intensifying work, investing in human and material assets) since they own the whole residuals (income). Extension of farm size through outside supply of labor or services is restricted since directing, monitoring, and disputing costs are extremely high in labor-demanding and spatially dispersed productions. External financing of farming via debt, equity sell, or preferential public programs have been out of reach because of the high costs for preparing project proposals; meeting formal paperwork, ownership, coo-financing etc. requirements; and ‘arranging’ funding. Thus possibility for effective farm enlargement and growth in productivity through intra-farm division and specialization of labor, mechanization, application of chemicals, innovation has been limited by the small internal investment

⁸ In Bulgaria there is not a formal requirement to register a farm. Official statistics report as ‘Physical Persons’ unregistered farms meeting certain criteria (minimum size of farmland, number of animals etc.).

capacity (savings, profit). In general, primitive technologies and poor environmental and animal welfare standards prevail (Bachev, 2006: 143). As much as forty percent of surveyed farms report not using essential services at all. Low cost, outside land supply (leasing) is practiced by commercial farms to explore economies of scale on existing assets. Outside supply of indispensable inputs and services (seeds, chemicals, veterinary) is not connected with significant costs since they have occasional and standardized character (low specificity, many suppliers). In contrast, highly-specific feed supplies for animals and mechanization services are effectively secured through joint ownership modes such as cooperative and group farming.

Own farm enterprise has been secure mode for providing (full or part-time) employment for family members. Family organization is also an effective form for intergeneration transfer of farm-specific intangible assets (know-how, reputation). However, small-scale commercial farms have little ability to meet institutional and market restrictions, and bear the risk, and protect against natural and market hazards. A great number of them face great transacting difficulties in marketing of their output. Most often they are not preferable partners for big buyers because of small volume and less-standardized character of output, and impossibility (unaffordable costs) to verify quality of products through laboratory tests, certificates etc. On the other hand, official wholesale markets have been inaccessible for these farms for the reason of great distance; high fees; and requirements for volume, special preparation, certification. Besides, farms frequently experience no accomplishment of contract obligations (none or delayed payment), huge market price fluctuation, monopoly situation, missing markets etc. In order to protect transacting and avoid unwanted exchanges primitive forms for risk minimization is commonly used such as investment in more universal but less productive (profitable) assets, diversification of production, informal cash and carry deals, direct retail marketing etc.

With exception of tobacco producers, the development of effective collective organization for risk sharing, price negotiation, marketing, and/or lobbying for public support, have been difficult. That has been because of the high transacting costs ('free riding' problem), diversified interests of individual farmers (old-young farmers; larger or smaller-size farms; specialized-diversified operators etc.), and low reputation and inefficiency of new emerging farmers associations. Majority of small commercial farms are vulnerable and have poor mechanisms to protect from outside institutional, market, and natural disturbances. Most of them have little ability to face severe market competition, and meet fast evolving institutional (e.g. EU) restrictions, and bear the risk, and safeguard against natural and market hazard (buy insurance, diversify, or cooperate). All these bring about to a significant income variation for individual farms, sectors, regions, and different years. What is more, farms in entire sub-sectors (like dairy) have been unable to adapt to new market and institutional order associated with EU integration. Consequently, there has been a constant process of transfer of land management toward bigger farms, restriction/ceasing of commercial activities, and decreasing the number of small farms.

Last but not least important, unlike other forms of organization the life cycle of one-person (family) farm is greatly determined by the age of the entrepreneur. Besides, incentives for a long-term investment in specialized assets for increasing sustainability are low for older farmers since there is no secondary market for farm-specific assets (investments in human capital, good reputation, know-how, organizational modernization). Therefore, a good number of small commercial farms operate at low sustainable level given the fact that most of the farm managers and labor are old in age.

IX. Conclusions

Post-communist transformation of Bulgarian agriculture let us determine factors, modes, and extend of farming specialization and governance in a fast changing institutional and market environment. We have demonstrated that particular type and pace of institutional modernization and market adjustment are responsible for evolution of new and specific (quite different from other European countries) forms for farming organization and specialization. Bulgarian model is characterized with a huge subsistence and part-time farming, production cooperation at a great scale, enormous concentration of resources in few business enterprises, widespread use of vertically integrated modes, domination of informal modes and personal relations, numerous missing markets and failures, backward technological ‘development’, significant government failures.

The high efficiency and sustainability of all these structures could be only explained by the specific institutional restrictions and comparative transaction costs and benefits of individual modes. The later eventually determines the kind and extend of agricultural specialization within the farm (internal mode) and across markets (between farms). In one case, it leads to a great restriction of the farm size and specialization far below the technologically optimal level (subsistence, part-time and small-scale farming). In other instances, the same factors are responsible for enormous integration of activities and extension of farms boundaries beyond the technological determinants.

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