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# THE PROFESSION OF (AGRICULTURAL) ECONOMISTS AND THE EXPERIENCE OF TRANSITION

*The objective of the paper is to survey the state of knowledge of economists and agricultural economists at the onset of transition and seventeen years later. The 'standard' economic reasoning in the early nineties was based on neoclassical economics and was termed the Washington Consensus. It is shown that the discrepancy between expectations and reality as well as the evolution of institutional economics has challenged economists. A 'blue print' favoured in the early nineties seems to be opposed by many economist nowadays. Agricultural economists have been influenced by the lines of thought in the main profession, but their approach had already been country-specific in early years of the transition period. Nevertheless, there are some open questions concerning assessment and approach in giving policy advice.*

## 1. INTRODUCTION

We all had the privilege of observing a unique change in the global economy. A large number of world economies dissolved their economic systems, which were based on a planned economy, and tried to introduce a market economy. Most Western economists celebrated the decline of the socialist systems and considered this as proof of the superiority of the market economic systems. Hence, it was expected that the well-being of people living in these countries would improve fast. Of course, economists knew that the transition from one economic state to another could not be ordered by political order, but needed the design of specific policies that often result in delayed positive effects. Understandably, economists were in high demand. Economic advice was needed for the design and implementation of policies. In general, economists accepted the role of advisers; it was considered a chance to apply the widely accepted economic know-how of the profession. The transition of planned economies was considered a huge experiment to prove the superiority of a market economy. However, it may well be that many economists were not aware that their past experience had been derived from observations in market economies and that their theories had been never tested in economies that had to be transferred from plan to market. There was widespread agreement about how a market economy should look like and what the role of the state should be in such an economy, but there was less agreement how the transition from one state to the other should be orchestrated. Hence, the performance in transition countries provides a unique chance for economists to test and question their basic under-

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standing of policy reform. After more than 15 years taking stock seems appropriate. The main purpose of such an exercise is not to prove that some assessments and recommendations were not the best. Instead, the purpose is to learn from the past. Our profession can learn the most from the past if there is a consensus about the explanation of the development of transition economies and the identification of policy effects. Fortunately, stocktaking is facilitated in one aspect. There seemed to be fairly wide agreement at the beginning of the 1990s what kind of policies should be instituted to speed up on the road from a planned to a market economy. In terms of overall policy recommendations, we can rely on the so-called Washington Consensus. In terms of agricultural economics, the state of affairs at the beginning of the 1990s has probably been recorded the best in a WORLD BANK document in which the leading Western economists had the opportunity to present their view on what should be done in transition countries.

Concerning taking stock of performance and reconsideration of earlier recommendations, there are some excellent publications focusing on the general economy. One of the publications is a book by the WORLD BANK on "Economic Growth in the 1990s. Learning from a Decade of Reforms" [World Bank 2005]] and a review article by Rodrik [2006]. There are numerous studies on the performance of the agricultural sector and the impact of agricultural policies. What seems to be missing is an assessment of the basic assumptions of agricultural economists, the observation of the facts, and a reconsideration of the basic assumptions. This paper tries to contribute to a discourse on these issues.

Agricultural economics is a special branch of economics, and it can be assumed that the state of affairs in economics is also relevant for agricultural economics. Therefore, the first part of the paper presents the widely shared knowledge among economists and their expectations at the beginning of the 1990s, the factual development, and the reconsideration of some economists. The main questions to answer are: Would general economists give the same kind of advice today as in the early 1990s? In what respect would the advice differ if there were a difference at all? Is there agreement on how to measure the overall economic performance of transition countries? Is it likely that performance would be better if different advice had been given?

In the second part of the paper, similar questions as in the first part will be looked at, but the focus is on agriculture and agricultural economists.

## 2. GENERAL ECONOMISTS AND TRANSITION

### 2.1. THE STATE OF AFFAIRS IN GENERAL ECONOMICS AT THE BEGINNING OF THE TRANSITION

It is well-known that two economists hardly agree on specific issues. Hence, it seems unrealistic to look for a widely accepted view. Fortunately, there is a publication available that expresses the main view of the dominant organizations in the field of development and policy advice, namely the World Bank and the International Monetary Fund, at the beginning of the 1990s. Moreover, what was called the Washington Consensus was shared by many leading economists outside the two

organizations. Williamson stated "that the Washington Consensus is a 'universal convergence,'" and that it constitutes "the common core of wisdom embraced by all serious economists" [Williamson 1993: 1334]. He codified the approach as a set of 10 axiomatic generalizations that, given certain values, are generally shared by scholars and practitioners concerned with economic growth in developing countries. He also listed the remaining analytical problems on which normal economic science needs to focus. Finally, he dismissed those who challenged the consensus view as "cranks" [ibid: 1330]. Moreover, there is ample evidence that the economic understanding that led to the Washington Consensus has been the backbone of the main external policy advice given to individual transition countries. Hence, it is well justified to consider the Washington Consensus as the state of affairs in economic policy advice at the beginning of transition.

The Washington Consensus of 1990 reflected a summary of the lowest common denominator of policy advice addressed by Washington-based institutions (including the World Bank) [Williamson 2000]. The consensus was summarized in the following 10 propositions.

(1) Fiscal discipline
(2) A redirection of public expenditure priorities toward fields offering both high economic returns and the potential to improve income distribution, such as primary health care, primary education, and infrastructure
(3) Tax reform (to lower marginal rates and broaden the tax base)
(4) Interest rate liberalization
(5) A competitive exchange rate
(6) Trade liberalization
(7) Liberalization of inflows of foreign direct investment
(8) Privatization
(9) Deregulation (to abolish barriers to entry and exit)
(10) Secure property rights.

Even if stated as "the common core of wisdom embraced by all serious economists" [Williamson 1993: 1334], the propositions were not accepted by all quarters. Terms used to describe the Washington "Consensus" included 'neoliberalism,' 'market fundamentalism' [Williamson 2000], or a summary in the forms 'free up trade, practice sound money, and go home early,' 'liberalize as much as you can, be tough in monetary and fiscal matters,' or 'policy advice based on free market principles and monetary discipline' [Williamson 2000] indicate the objections against the advice. Nevertheless, there are clear indications that the World Bank and the IMF followed these recommendations.

The Washington Consensus is completely in line with traditional economic thinking. The deductions are based on a collection of hypotheses that are the basis of neoclassical economics. Hence, the conclusions are only acceptable as policy advice if the hypotheses concerning the behavior of political and economic agents reflect the reality in a given country. If these agents had behaved the same all over the planet, the policy advice would have been the same for all transition countries. Given these assumptions, the Washington Consensus was considered a blueprint for policy advice in transition countries. Actually, the recommendations describe a final state of a market economy given the stated assumptions of neoclassical theory.

The recommendations seem to be less helpful for giving advice on how to move from here (the plan) to there (the market). Transition requires by definition a change in the coordination of decision making in the society, moving from central to decentralized decision making. Organizations that received orders on how to cooperate have to set up bilateral or multilateral agreements with other organizations. Organizations are groups of individuals, which are bound by some common purpose to achieve objectives. Hence, organizations are comparable to the players in a game. Family farms and collective farms are important organizations, but so are ministries, parties, the central bank, and the Court of Auditor. It is obvious that the specifics of organizations vary widely across countries. Moreover, the rules (institutions) that constrain their behavior vary as well. It should be noted that these rules do not only and mainly reflect the legislation in a country. They also reflect among others how the rules are set up (decision-making procedure), how the rules are enforced, and the so-called embedded institutions, which are mainly based on the culture of a nation. Of course, the behavior of organizations is not only constrained by the institutions that deal with interactions among organizations, but also by rules that determine the internal relationship of a specific organization.

The importance of organizations and institutions will be highlighted by the discussion of selected recommendations of the Washington Consensus.

To (1) *Fiscal discipline*: Fiscal discipline is indeed a necessary condition for transition. It is likely easy to convince policymakers of this importance. However, what matters from a political point of view is how to move from here to there. Keep in mind, that policymakers in transition countries had little information on potential tax revenue resulting from policy changes and also about the marginal effects of spending. Flows of information among the different government bodies were regularly limited, and thus, it was hardly possible to assess the request for budget allocation of individual departments. Moreover, there was no clear division of labor between the private and the state sectors at the beginning, e.g., agriculture had to provide for many services in rural areas that are normally undertaken by the government. It is questionable how helpful a recommendation to 'adhere to fiscal discipline' really is.

To (2) *Redirection of public expenditure*: Most policymakers had likely agreed that a redirection of public expenditure was needed from the start of transition. However, how could this redirection be implemented? Redirection implies to take from someone and to favor others. Normally, the losers are better organized than the winners, as the loss shows up sooner than the gain. How could a consensus in the society be reached if the basic understanding of economic effects was so poor as at the beginning of transformation? Moreover, it has to be noted that none of these countries had an administrative infrastructure in place that could be used. Corruption must also be taken into consideration. Hence, redirection of public expenditure had to take into account many constraints, not just the expected main effects. Policy advice neglecting these constraints was not very helpful. Moreover, huge public expenditure may have been needed to take care of market failure. However, the countries did not have strong policy units to identify the kind of public goods that were needed the most.

To (3) *Tax reform*: Of course, tax reform was needed as the planned economy was mainly financed by revenue from state-owned enterprises. However, how can tax reform be implemented if the economy is not mainly based on monetary transactions, but on barter? If information on income is rudimental, tax administration weak, and tax evasion pervasive, effective tax reform is difficult. What matters the most are the constraints and not just the advice about in which direction a move is needed.

To (4) *Interest rate liberalization*: Again, it sounds acceptable that interest rates should be liberalized during an early phase of the transition process. However, how important interest rate liberalization actually is depends very much on the economic stage of the economy. Interest rates are of importance if borrowed capital is important in the economy. However, transition countries have even up to now only a small share of private credit as a percentage of their GDP. The economic and social climate is not adequate for the creation of a credit market.

To (5) *A competitive exchange rate*: A liberal trading system with competitive exchange rates generally supports growth in market economies. However, many transition countries had no competitive markets, and they suffered from many non-tariff barriers to trade. The notion of a competitive exchange rate is somewhat vague if markets function so imperfectly, as in most transition countries in the early stages of transition.

To (6) *Trade liberalization*: It may sound easy to follow the advice to liberalize trade. However, one should keep in mind that any trade liberalization demands internal adjustment and, hence, mobilizes political resistance. Adjustment in these countries needs, of course, time. The problem may be illustrated with the help of one example. The added value of East German agriculture was highly negative even at highly supportive EU prices at the time of unification. Had this sector been confronted with EU market prices without any government support, most of the agricultural enterprises would have gone bankrupt within a very short period of time. Keeping in mind the mal-functioning labor and capital markets at that time, unemployment in rural areas would have been a major problem, even more than it actually became. Experience has proved that the agricultural sector in East Germany evolved to one of the most competitive sectors in East Germany within a few years. The message that can be drawn is as follows: trade liberalization has to take into account the ability of the sectors to adjust and-equally important-the ability and willingness of the population to cope with the changes in the economic environment. Hence, trade liberalization, even if accepted as an efficient instrument for growth of welfare in the medium and long term, may not be a reasonable instrument in the first stages of transition.

To (7) *Liberalization of inflows of foreign direct investment*: There is ample evidence that foreign direct investment can contribute to faster transition and, thus, can soften the hardship of transition. However, two points seem to be in order. First, following the advice to liberalize inflows of foreign investment may not result in noticeable effects. Foreign investors do not take into account the barriers of entry to a country, but the internal economic environment. Second, liberalizing of capital inflows may have to take into account the reservations of the population. The population may be afraid of and may reject foreign investors. Purchase of land by for-

eigners is a special case in point. Even if the population accepts that foreigners would improve the efficiency of the agricultural sector, the population may reject access to land by foreigners. The attitude may be partly explained by expected negative effects on the labor markets, but also by cultural beliefs. Land is considered not just as a factor of production, but as something special. Allowing foreigners to buy land without any restrictions may have caused political unrest in some transition countries.

To (8) *Privatization*: Without question, a market economy has to be based on private ownership. Hence, privatization of state-owned capital is an absolute necessity. Nevertheless, the political advice 'liberalize fast' may delay a sound restructuring of the economy. First, the timing and form of privatization affect not only distribution of wealth and income but also the efficiency of the economy and, even more importantly, the acceptance of market-oriented policies. If transaction costs did not matter, privatization might be always better than non-privatization. However, it is known that transaction costs are highly important and, hence, affect economic performance. Second, privatization in an economy with non-competitive and not transparent commodity markets and badly-functioning credit and land markets may lead to the enrichment of a few without contributing to the intended efficiency in the economy. Third, privatization can affect a country's ability to raise taxes and may impair the fulfillment of the government's function. Take, for example, the case of Russia. Privatization of the oil industry without having the administrative capacity to tax the new private owners limited government revenues and the provision of public goods. Privatization of agriculture is a special case in point. Socialist farms had to provide for many services that are offered by the public sector in market economies. Hence, privatization without having set up the infrastructure for the public sector would have led to socially unacceptable results; poverty of the rural poor would have been increased..

To (9) *Deregulation (to abolish barriers to entry and exit):* Possibly, all market economies intend to deregulate their economies. Past regulations may have improved the well-being of the population at the time of its setting into operation, but may have proved to be counterproductive after some time. It is well-known that deregulation is a highly sensitive political issue. Countries succeed with deregulation only under exceptional condition, such as in New Zealand in the year 1984 and thereafter. Hence, it is not very helpful to advise transition countries that they have to deregulate; it is more important to develop a strategy, which may lead to success. Such a strategy has to take into account the institutional framework in the country as well as conditions on the political markets.

To (10) *Secure property rights*: It is widely accepted that a market economy can only function efficiently if property rights are secure. However, it is unclear to what extent property rights have to be secured at different stages during the transition phase. The comparison of China and Russia indicates that China, with less secure property rights, was much more attractive for investors than Russia. Consequently, growth in China significantly surpassed that of Russia. The issue of property rights has a different meaning in a planned economy than in a market economy. Hence, the role of the government differs in these two economies. It is not easy to define the role that the government has to play in the transition process moving from privati-

zation to securing property rights. Moreover, policymakers will not base their decisions on a well-defined social welfare function. Instead, they may pursue their own personal interests. Given the weak monitoring of policy decisions during the first years of transition, policymakers may have quite a lot of leeway in their decisions pursuing their personal interests. Hence, the question arises whether property rights can be secured adequately if policymakers are not willing, able, and/or inclined to secure them.

This short discussion of the 10 Commandments hint at the shortcomings of corresponding recommendations.

First, it was assumed that the policy changes needed were the same for all countries. Country-specific information was not needed. But viable policy changes are always country-specific as the political economy differs from country to country.

Second, the role of institutions, defined as rules that constrain human behavior and make it predictable, were widely neglected [see, among others, Kolodko 1999: 235]. As institutions are country-specific, there is no blueprint for policy reform that could be applied to all countries. The new role of the government, political economy aspects, policy and market failure were widely neglected.

Third, the recommendations were not based on an analysis of the most binding constraints for prosperity. Hence, there was no built-in priority of measures to be introduced [Rodrik 2006: 985]. Privatization may not lead to an enabling environment for investors and may not spur growth if the legal and administrative framework is not in place to secure property rights.

Is there a consensus on what would have been better advice and what should be future advice? The World Bank [1995] seems to have changed the past approach. The organization has widely accepted the reasoning of Rodrik (2006) that institutions matter, that it is important to identify the country-specific constraints, to emphasize market failure and the new role of the State, and to design reform based on attacking the main constraints.

In contrast, the sister organization in Washington, the IMF, seems to stick to the original commandments, but augments them with a list of essential institutional aspects [Krueger 2004]. The focus is still not on identifying the main constraints. Thus, there seems to be no consensus in the profession of economists. There are still many who consider the advice based on the Washington Consensus to be the best approach. Consequently, the disappointing experience is diagnosed as a failure of policymakers to implement policy advice accurately. However, the pendulum seems to have moved to the direction advocated by Rodrik [2006] and the World Bank [2005].

## 3. AGRICULTURAL ECONOMISTS AND TRANSITION

Agricultural economics is a subset of general economics, and one should not expect a huge difference in the main paradigms. However, agricultural economists are generally more applied in their work than most of those working in the main areas of economics. The famous quotation by Leontief has been quoted many times as proof of the problem-oriented research of agricultural economists [Leontief 1971: 5].

The basic understanding of the leading agricultural economists is well documented in a WORLD BANK study [World Bank: 1992]. It is obvious that these agricultural economists are well-trained neoclassical economists; hence, they advocated for fast privatization and, similar as their colleagues, did not focus much on market failure, political economy aspects, and the new role of the government. However, they addressed explicitly the need to deal with market failure on the capital market, on the land market, and the market for extension, research, and training. Moreover, they emphasized the importance of governance in the public sector and on farms. The need for restructuring large farms was well highlighted. There also seemed to be a consensus that corporate farms are less efficient than family farms, that large farms are less efficient than small farms, and that there would be a strong incentive to set up family farms. Less emphasis was placed on dealing with market failure and the role of the state to provide the needed public goods.

There is a general consensus that expectations were not met. However, there seems to be disagreement concerning the main reasons for the bad performance. In particular, there seems to be no general agreement on the following points, which will be discussed:

- How to measure performance?
- Is there a strong relationship between land reform and agricultural performance?
- Are there economies of scale in agriculture that put family farms at a disadvantage compared to larger private farms? Are economies of scale really the main determinant of farm size?
- Do family farms perform better than corporate farms?
- How important are institutions for the foundation of family farms and the development of the agricultural sector?

## HOW TO MEASURE AGRICULTURAL PERFORMANCE?

Policymakers tend to focus on the volume of agricultural production. An increase in production is often considered to be a success and a decline a failure. However, from an economic point of view, such a criterion is not very meaningful. A negative change in agricultural production might be needed if the country wants to use its resources efficiently. Moving from a highly protected agricultural sector to a competitive sector is likely accompanied by a decline in production. Of course, transition can be considered as successful if the overall GDP exceeds that of the pre-transition period, but this will not necessarily hold for each individual sector.

An indicator that is often used by economists is the change in total factor productivity. Again, this seems to be a perfect indicator for the whole economy with undistorted markets. The positive change in total factor productivity implies a more efficient use of resources, which is the ultimate aim of transition. However, this indicator could be highly misleading if the transition has led to high unemployment. Production could be higher, but total factor productivity is lower if all factors were employed. A better indicator would be 'total production divided by total available factors of production in the economy whether employed or not.' This indicator

would yield a lower number than total factor productivity calculated as total production divided by employed resources.

The total factor productivity of agriculture is widely used as a measure of performance [see, for example, Rozelle and Swinnen 2004]. The problem of this indicator can be illustrated with the experience of the former GDR. Agriculture was not competitive at the time of unification. Actually, value added at EU prices for output and inputs was negative in 1989. Within a few years, agriculture in the New Laender became more profitable than in West Germany. Total factor productivity went up significantly. One would like to certify a high performance status for agriculture of the former GDR. However, there is a significant problem. There was huge labor shedding (83% within a 4-year period), and there was huge unemployment in rural areas (up to 30%). Farms did substitute labor for highly subsidized capital. The overall economy would have been better off if the scarce factor capital had been used in other economic sectors and if more labor were employed in agriculture. A better performance indicator would have been the comparison of the value of the marginal product of factors used in agriculture valued at economic shadow prices of factors. More discussion in this field seems to be needed.

Another convincing approach has been created by Csaki [Csaki - Nash 1997]. He developed a methodology that can be used to assess the status of agricultural reform. In contrast to earlier World Bank studies, Csaki identifies five areas where reform is needed, including institutional reform, ranks the individual fields on a scale from 1 to 10, and aggregates them. The information used was based on the individual assessment of World Bank staff working in the individual country, and it informs fairly on the status of reform. The assessment allows countries to be grouped with respect to their reform status. This methodology is a huge step away from a blueprint policy. The inclusion of the institutional framework takes into account country-specific criteria.

## LAND REFORM AND AGRICULTURAL PERFORMANCE

Agricultural economists emphasize land reform as one of the most important items on the reform agenda. Thus, one would expect that there is a close relationship between land reform and agricultural performance. Lerman investigated this issue several times, and in his 1998 article, he noted that he could not find an evident relationship. This finding was a surprise for many agricultural economists, including me. However, the findings in general economics during the last decade can shed some light on the puzzle. Land reform should lead to testable results if the lack of land reform were the same binding constraint in every country under consideration. This does not seem to be the case. A small step in land reform, as in many CIS countries, may have no impact as farm workers were often not even aware that they had received ownership of their land. But even if they were informed, it did not matter at all or not much; badly functioning product and factor markets, not existent markets for land and rural credit, the missing know-how, and the unwillingness to bear risk did suppress the setup of family farms. In particular, embedded institutions may have suppressed the potential effects of land reform [Koester 2007].

Therefore, the effect of land reform can hardly be identified in a cross-country study. Following the present state of affairs as described in the review article by Rodrik, the impact of individual determinants of performance cannot be identified with a cross-country study; performance is constrained by different determinants in individual countries, and the marginal change in any of the determinants has different effects in different countries. Based on this insight, it seems questionable to place priority on land reform in countries where important markets do not exist or are badly functioning and where the public sector has not been set up to provide public goods urgently needed in rural areas for making private investment profitable and for provision of social services hitherto provided by large farms.

## ECONOMIES OF SCALE IN AGRICULTURE

There seemed to be a widely held agreement in the profession that the question of economies of scale is important for giving policy advice. The question about economies of scale in production is seen as related to an efficient farm structure, with a focus on small family farms and not on large-scale commercial farms. It seems to be generally agreed that in the absence of substantial economies of scale farm internal transaction costs are crucial for the determination of the optimal farm size [Schmitt 1993]. Allen and Lueck [1998] argue that the monitoring costs of workers on family and large farms may become the most important determinant of the optimal farm size due to nonexistent economies of scale. As family farms have likely lower monitoring costs of workers, family farms may be superior to large farms.

This line of thought completely neglects market transaction costs. It may well be that family farms produce at lower costs than large farms, but lower prices received for products, higher prices paid for inputs, and constrained access to credit may overcompensate the advantage in production costs. Hence, the conclusion that the nonexistence of economies of scale in agriculture leads to the superiority of family farms is logically not well founded. Nevertheless, information on whether there are economies of scale in agriculture is important. If there are economies of scale, the superiority of family farms is less likely than otherwise.

It seemed to have been generally agreed among agricultural economists in the early 1990s that economies of scale did not exist or were insignificant in agricultural production and that family farms are the most efficient organizational form of farms. The most influential publication was likely by Binswanger et al. [1993]. The authors concluded that small farms have a productivity advantage [Binswanger et al. 1993: 2718]. However, they emphasized that the functioning of markets is important and that the inverse relationship between productivity and farm size holds more likely in countries where wage rates are low and labor intensive agriculture has a comparative advantage. Moreover, the empirical investigation was limited to developing countries. One of the papers that may have been the most influential as it seems to be the first one focusing on a specific transition country was that by van Zyl et al. [1996]. However, even if often quoted and accepted as proof, the empirical test is not very convincing. First, the data used by the authors represent farms in Poland belonging to the size groups < 5 ha, 5–10 ha, 10–15 ha, and above 15 ha. The

largest farms are 44.65 (quality adjusted) ha in one of the two regions under investigation and 82.44 (quality adjusted) ha in the other region. It is quite obvious that this data set will not allow conclusions about the productivity of farms not belonging to this range of sizes. However, what is considered a small or a large farm varies widely among countries. Therefore, the generality of the findings is highly impaired. Second, the authors calculate total factor productivity, but do not include labor as one of the inputs. Consequently, the total factor productivity of small farms is biased upwards compared to large farms. Third, the researchers employed data only from the year 1993. It should be quite clear that farms had not yet completely adjusted to the market environment, in particular because the most important markets for adjustment, i.e. the credit and land markets, did not yet exist or did not function well.

There have been numerous studies on estimating economies of scale in agriculture [see Gorton–Davidova 2004]. The methods applied differ. Some studies just calculate production costs for farms of different sizes; other researchers estimate total factor productivity or employ the production function approach or use Data Envelopment Analysis (DEA). There is one particular interesting publication that reports the results for alternative approaches using the same data set. The authors [Boussemart et al. 2006] utilize a Cobb-Douglas production function, a calculation of milk production costs according to the size of farms, a quadratic cost function, and an application of the DEA method to test for the presence of economies of scale in dairy farming in Estonia. They found "that in the cases studied, the extent of economies of scale depended on the methods used. The assumption of constant returns is not to be rejected in view of some results. Other results would show that the best performances are obtained by family run medium sized farms." This result may be a surprise. However, it should not be. There are doubts whether this type of empirical research is adequate to inform on the existence of economies of scale in most transition countries with a specific economic environment.

The problem can be highlighted for the case of production function analysis which is used as the basis for cost functions. Of course, the production function only informs on a specific technical relation and no specific assumptions are needed. However, if the data are used from a sample of farms the assumption is needed that the same production function holds for all farms or that the difference can be captured by a dummy variable. An even more significant problem shows up, if the estimated production function serves as the basis for the cost function. It has to be assumed that each individual farm produces at the lowest average cost with given resources, and the envelope of the individual average costs is downward sloping and, thus, informs on economies of scale. The derived cost function, including a set of small, medium, and large farms, will only provide the desired result if some specific assumptions hold: First, all farms have to maximize their profit; second, they have to be faced by the same output and input prices; third, they are not confronted with risk or uncertainty; fourth, they can adjust fixed and variable factors to such a level that allows them to minimize average cost and to maximize profit.

These assumptions could possibly be realistic for market economies where economic conditions have not changed much over time and where product and factor prices are the same for all farms; however, the environment is different in transition

countries. The production function for large farms is certainly different from that of small farms; farms are not in an optimum situation as the environment has changed significantly over the last years, and adjustment has been constrained by badly functioning markets. Finally, the assumption that product and market prices are the same for all farms could only be true if market transaction costs, including access to credit and to land endowment, were the same for all farms. As these assumptions do not hold, some farms may produce in a shot-run optimum with marginal costs equal to market prices, but marginal costs significantly higher than average costs and minimum average costs. Lack of credit and limited access to land may result in a suboptimal farm size. This situation may be more pronounced for small family farms than for large farms. Consequently, the research may lead erroneously to economies of scale.

One may wonder whether a comparison of production costs between small and large farms could provide the desired information. The advantage of this approach is that it takes into account varying input prices across farms; thus, the measure could inform on the competitiveness of alternative farm sizes given the actual environment. However, even this information could not be the basis for the sound formulation of policy advice. Averages may not be meaningful if the variance is large.

The problem with the use of averages will be shown for the case of farm data in the Ukraine. Demyanenko - von Cramon-Taubadel [2004] investigated private farms, corporations, and cooperatives in Ukraine. The data revealed (see appendix Table 1) that the variance of all variables is very high. Private farms employed at least 3 workers on at least 6 ha and employed at most up to 438 workers and cultivated up to 3,972 ha. What does a mean of 141 workers on private farms and average acreage of 1,467 ha mean? Policymakers may be interested to learn which organizational form may be the most profitable. Looking on averages of profit per ha, policymakers may conclude that private farms are the most profitable and cooperatives the least. However, looking at the highest profit per ha, the data reveal that the best companies and the best cooperatives earn a much higher profit per ha than the best private farms. In contrast, the least profitable private farms make a smaller loss than the most loss-making companies or cooperative. It would be misleading to base policy decisions on averages if the variance is as large as documented for farms in Ukraine. The main determinant of profitability is obviously not the organizational form, but some other determinants. If governments aim at improving efficiency in agriculture, they are advised to improve the effects of those variables that speed up structural change in agriculture. Improved functioning of product and factor markets, and in particular of land and credit markets, would support structural change and transfer land to the more efficient farmers.

There seems to be significant empirical evidence that economies of scale are not the main determinant of farm size and farm structure [Gorton - Davidova 2004]. Market imperfection leading to high transaction costs favors large farms in transition countries, and embedded institutions (preference for working on the farm of ancestors) seem to be more important. Moreover, managerial ability, including entrepreneurship, determines variance in performance across alternative farm sizes to a high extent. Conclusions based on averages may be highly misleading.

The problem of differences in input prices can be overcome by a comparison of average production costs of 'typical farms'. A data set that details average production costs for selected agricultural products on small and large representative farms in a large number of countries are partly available and work is under progress to enlarge the data base. Two Figures, for milk and rapeseed equivalents are presented in the Appendix. It is quite obvious that the larger farms produce at significant lower average costs than the smaller farms.

### FAMILY FARMS VERSUS CORPORATE FARMS

It is well-known that agriculture in Western market economies is mainly dominated by family farms. However, it should be noted that the term 'family farm' has not yet been well-defined. The German government favored the Leitbild (model) family farm for decades and only said the farm has to be managed by a full-time farmer and work has to be mainly provided by the farm family.* According to the USDA, a family earns less than $250,000 gross receipts annually on which day-to-day labor and management is provided by the farmer and/or the farm family that owns the production or owns or leases the productive assets. In Sweden, a family farm is a farm that allows one family to support themselves solely on farm income and full-time work [Lindahl 1995].

The alternative definitions allow at least identifying those farms that are not family farms. These are part-time or full-time farms that generate an inadequate income for the family, farms with a hired manager, farms with more hired workers than family workers, and farms that are organized as corporations or cooperatives.

In spite of these differences in clear definitions of the term 'family farm,' there was wide agreement that a family farm is rather small and nevertheless competitive. As this type of farm was dominant in Western countries, it was no surprise that the widely held expectation among Western agricultural economists at the onset of the transition was a fast move towards family farms in transition countries. Obviously, that has not happened. Many of us [Schmitt 1993] argued as follows: as the existing farm structure is made up by family farms in most market economies, a structure made up by these farms must be optimal. This questionable conclusion led to the next questionable conclusion: a farm structure composed by family farms would be optimal for transition countries. It seems to be a widely held opinion that the gap between expectations and reality is due to incomplete policy reform, including creating an enabling environment, in particular functioning markets. However, it may well be that the profession misjudged the situation here (in the West) and there (in the East).

False expectations were partly due to the inaccurate interpretation of the reality in the West. Schmitt [1993] and others concluded that the predominance of family farms in the West proves their comparative advantage. However, the existing farm

* The 'Leitbild' of the German government has substantially changed after unification. The term 'family farm' as focus of agricultural policy is not used any more.

structure in a specific country is not mainly the result of pure economic calculations, but it is path-dependency; past farm structure determines largely present farm structure [Balman 1999]. Moreover, embedded institutions [Koester 2007] and sunk costs slow down structural change. The agricultural structure at any point in time is likely to be far behind the optimal structure. Hence, it was not plausible to think that a new farm structure in the East would be similar to the suboptimal structures in the West.

Even if some studies may show that present private small family farms in a specific transition country are the most efficient given the present environment, it is not at all certain that a farm sector dominated by small family farms would have evolved in a changed environment with functioning markets. Experience shows that the capability of management is a highly important determinant of performance. It is likely that some of the best qualified entrepreneurs have already started farming. Surveys show that the potential of would-be farmers seems to be limited. Many of the would-be farmers, in particular most of the current farm workers, are not willing to change their lifestyle and to bear the risk of being a self-employed entrepreneur.

## THE IMPORTANCE OF INSTITUTIONS

Most agricultural economists use the neoclassical framework in their research. However, it is questionable whether such an approach is the most efficient for research and policy advice in transition countries. Neoclassical economics assumes that people's behavior is guided by the maximization of utility or profit, taking into account specific given constraints, such as income and prices for individual consumers and factor endowment and input prices for entrepreneurs. Moreover, it is assumed that decision makers have complete information. Consequently, people behave the same in all societies. In contrast, institutional economics emphasizes differences in attitudes of people leading to a huge variance in objectives and behavior. Moreover, constraints for the individual's behavior are not only materialistic but also depend - or even more specifically - on the social, legal, and economic environment. However, rules that constrain individual behavior differ widely across countries; institutions are country-specific and even person-specific. People in the real world are very much guided by tradition, culture, and beliefs, i.e., by embedded institutions [Williamson 2000]. Beliefs about how the world and the economy work are important for individual decisions. Some examples will be given to highlight the importance of embedded institutions. It may be that would-be farmers may not like to become farmers because they have not learned to behave as an entrepreneur, they may be risk-averse, or they may not like to change their lifestyle. Transaction costs may be high for getting credit or for investments made to order as trust is lacking. The land market may not evolve because people consider land to be a specific asset that should not be traded. Land may be idled even if it could be used productively by someone. Farm workers may have no bad feelings about shirking and stealing. Policymakers may shrink away from genuine policy reforms as constituents may not support them and strong interest groups oppose them. Policymakers may intervene in markets because they believe that doing so will contribute to food security.

Given specific embedded institutions, setting up a functioning and well-accepted market economy in a country is not only a huge economic problem, but possible more so a political one. Policy advice which does not take into account the political market in a country may not be effective. Market liberalization and land reform was most likely overemphasized in many countries [Csaki 2004: 272].

## SUMMARY

There seems to be an increasing number of general economists who have changed their understanding of transition, see past advice somewhat critically, and lay stress on some less emphasized issues such as market and policy failure, embedded and other institutions, and a strong role for the government. Growth is not to be considered the main policy objective any more; distribution of income and wealth have gained importance. Agricultural economists may have had better know-how than general economists to deal with transition problems, partly because agricultural economists are generally more applied in their work; many had significant international experience and were used to take the institutional framework into account in conducting their analysis. However, there are still some open questions: What are the adequate indicators of agricultural performance in countries where market failure is pervasive? How to measure comparative advantages of farm sizes and organization form of farms? How important is the political market for policy reform in a specific country? How important are embedded institutions for the design of policy reform and for the impact of policy reform?

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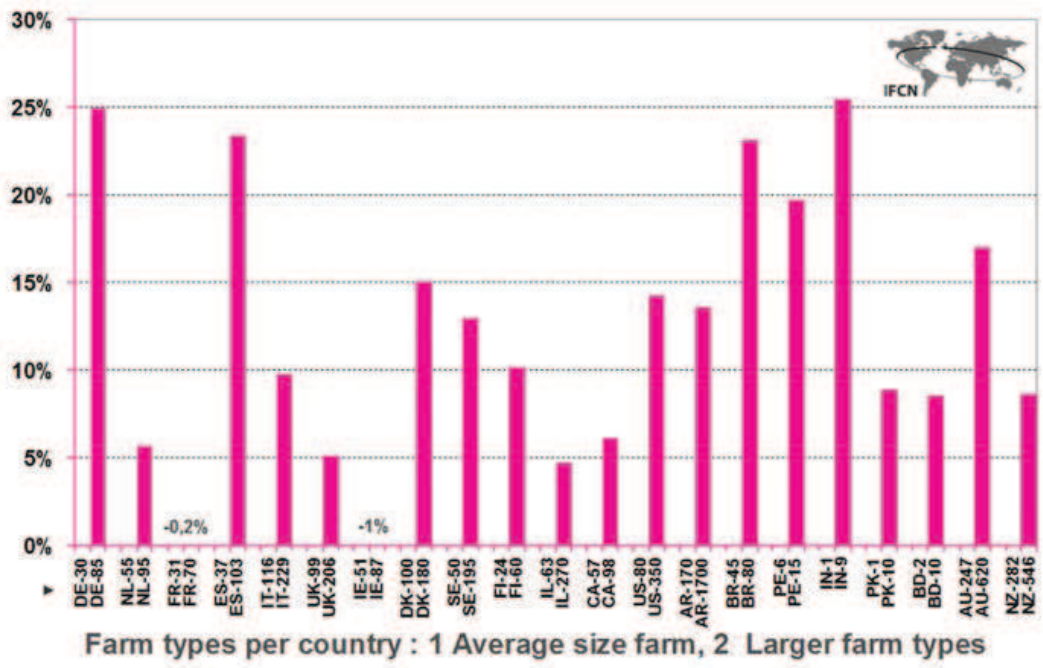
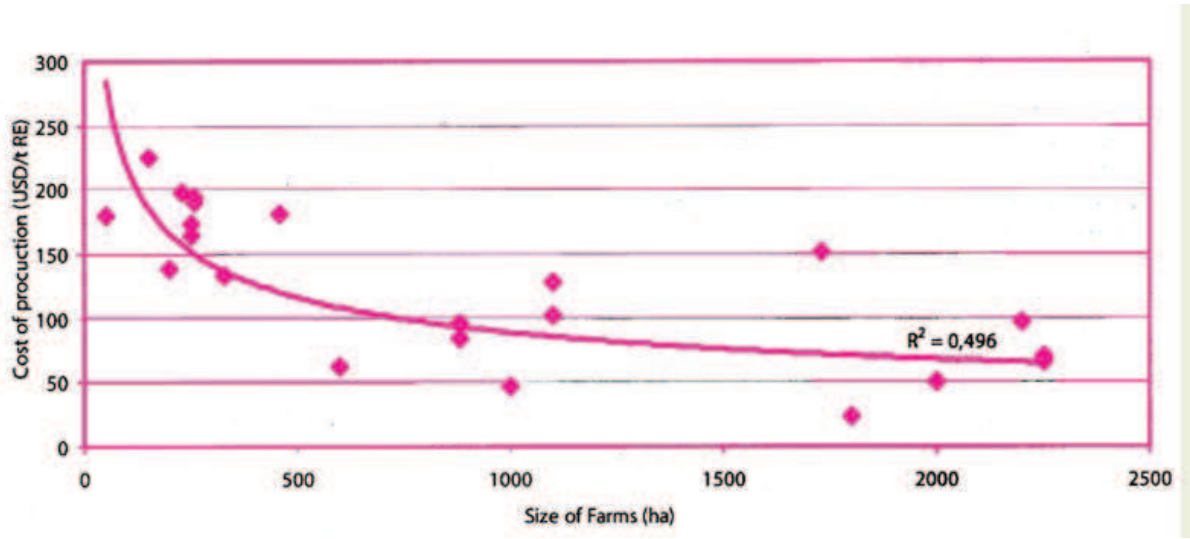
## APPENDIX




Farm code example: DE = Germany; 30 = 30 cows/farm

**Figure 1: Cost advantage of large farms in percent of average farms**




Note: RE = Rapeseed equivalents
Source: Agri Benchmark (2006) p. 23.

**Figure 2: Farm size and operating costs in rapeseed production**

**Table 1: Characteristics and performamce of agricultural enterprises in Cherkasy oblast by organisational form in 2001**

| Indicator | Minimum | Maximum | Average | Standard deviation | Coeff. of variation |
|---|---|---|---|---|---|
| *Private farms (57)* | | | | | |
| Farm land, ha | 6 | 3972 | 1467 | 926 | 0.63 |
| Number of workers | 3 | 438 | 141 | 101 | 0.74 |
| Fixed and current assets, thd. UAH | 12 | 14296 | 3589 | 101 | 0.99 |
| Production costs, thd. UAH | 14 | 4153 | 1099 | 3539 | 0.94 |
| Sales revenue, thd. UAH | 17 | 6963 | 1406 | 1432 | 1.02 |
| Profit, thd. UAH | – 373 | 3004 | 134 | 485 | 3.62 |
| Profit per hectare, UAH | – 220 | 756 | 86 | 173 | 2.00 |
| *Companies (450)* | | | | | |
| Farm land, ha | 3 | 35500 | 1688 | 1892 | 1.12 |
| Number of workers | 2 | 3065 | 162 | 172 | 1.06 |
| Fixed and current assets, thd. UAH | 2 | 53378 | 4908 | 5690 | 1.16 |
| Production costs, thd. UAH | 28 | 44791 | 1461 | 2616 | 1.79 |
| Sales revenue, thd. UAH | 22 | 55291 | 1702 | 3201 | 1.88 |
| Profit, thd. UAH | – 1394 | 3720 | 72 | 422 | 5.84 |
| Profit per hectare, UAH | – 19651 | 9467 | 16 | 1341 | 82.5 |
| *Cooperatives (75)* | | | | | |
| Farm land, ha | 12 | 3836 | 1846 | 931 | 0.50 |
| Number of workers | 21 | 481 | 211 | 107 | 0.52 |
| Fixed and current assets, thd. UAH | 520 | 29560 | 8967 | 6513 | 0.73 |
| Production costs, thd. UAH | 79 | 3570 | 1477 | 786 | 0.53 |
| Sales revenue, thd. UAH | 77 | 4469 | 1683 | 990 | 0.59 |
| Profit, thd. UAH | – 904 | 1649 | 51 | 374 | 7.50 |
| Profit per hectare, UAH | – 10112 | 7067 | – 115 | 1918 | – 16.70 |

Source: Demyanenko, S. and von Cramon-Taubadel, S. (2004)