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## **Transition and Agriculture**

by

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**California Agricultural Experiment Station  
Giannini Foundation for Agricultural Economics**

## **TRANSITION AND AGRICULTURE**

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## **TRANSITION AND AGRICULTURE**

More than 20 years ago, China embarked on its economic reform path by introducing the household responsibility system (HRS) in agriculture. A few years later, Vietnam followed a similar path. The leadership's major institutional reform in both countries reallocated key land rights from the collective farms to rural households. Agricultural production and incomes in both countries soared immediately after the initial reforms (Lin, 1992; McMillan et al, 1989; Pingali and Xuan, 1992). With seventy percent of the labor force employed in agriculture and the major share of consumer income spent on food, the reforms had a major positive impact on the reduction of poverty and the rise of well-being of the population in rural China. Agricultural productivity also grew in a sustained way throughout the entire reform period (Huang et al., 2000). Most researchers concur that the growth of the sector contributed importantly to overall performance (Perkins, 1994; Unger, Chan, and Kerkvliet, 1999).

Agriculture did not fare as well when the Communist countries in Central and Eastern Europe (CEECs) and the former Soviet Union (FSU) launched their economic reforms after the fall of the Berlin Wall. Agricultural output collapsed in almost all countries in the wake of the reforms (Trzeciak-Duval, 1999). Rural incomes also declined steeply in most countries.

The initial decline in output, however, is not the only story in Europe and the FSU countries. And, it is not the end of the story. The performance of agricultural transition among the non-Asian countries has varied considerably (Macours and Swinnen, 1999). While agriculture production has continued to decline throughout the past decade in countries such as Russia and Ukraine since the mid-1990s, the output fall has halted in Poland, Hungary, and other

central European countries. Productivity trends differ more greatly among countries even in the first five years after reform. Productivity growth began early in the 1990s in several of the CEECs. In contrast, stagnation and continued productivity declines characterize the entire agricultural transition period in Russia, Ukraine, and several other FSU republics.

In search of an answer for the determinants of success and failure of reform, the accomplishments of the agriculture-led East Asian transition, in particular for the case of China, has initiated a large literature debating the reasons for the rise in output and productivity. Some claim rural development has occurred primarily as a natural result of low initial levels of development (Sachs and Woo, 1994). Others give credit to policymakers, but allocate credit in varying degrees between institutional reformers and those in charge of public investments and other more traditional venues of agricultural development. For example, Lin (1992), McMillan et al (1989), and Pingali and Xuan (1992) attribute the success to decollectivization. Sicilar (1988; 1995) gives credit to price changes; Stone (1988) points to the rise in the availability of inputs. Huang and Rozelle (1996) and Fan and Pardey (1997) document the investment in research and development and water control. Somewhat paradoxically, given the central role that market development has been given in the transition literature on Europe and the FSU, the role of emerging markets and their contribution to the rural economy's performance has only recently begun to receive attention in China (deBrauw, Huang, and Rozelle, 2000).

Less empirical work has centered on isolating the determinants of agricultural growth in the non-Asian transitional countries mainly because of the lack of data and because the transition has been underway for a shorter period of time. In the work that has been done, research generally attributes agricultural decline in the CEECs and FSU countries to factors such as price and trade liberalization and terms of trade effects; land reform and farm restructuring; the

breakdown in the institutions that facilitate exchange of outputs and inputs, especially the disappearance of credit and mechanical services; and the lack of a tradition of entrepreneurship and private ownership in large parts of the FSU (Csaki and Lerman, 1995; Hobbs et al, 1997; Macours and Swinnen, 2000a; Trzeciak-Duval, 1999). Recently, a set of studies have emerged trying to systematically explain reform progress and the varying patterns of agricultural transition in the European and FSU transition economies (Csaki and Nash, 1997; Lerman 2000; Macours and Swinnen, 1999).

### **Objective and Scope of Proposed Work**

It is precisely the search for answers to what has triggered agricultural growth in some economies, but stifled it in others, and the lessons from the great experiment in agrarian transition, that is the focus of inquiry of this paper. The overall objectives of our proposed paper is to: (a) systematically document the post-reform trends in agricultural performance in Asia, Europe, and the Former Soviet Union; (b) identify the main reform strategies and institutional innovations that have contributed to the successes and failures of the sector; (c) analyze the mechanisms by which reform policies and initial conditions have affected the transition process in agriculture; and (d) draw lessons and policy implications from the experiment and identify the gaps in our understanding of the role and performance of agriculture in transition.

As part of this effort, we attempt to address a number of intriguing and important questions on the performance of individual countries or regions during transition. Why has China been so successful in its reforms, while Russia has not? Why is it that some CEECs have

rebounded and showing robust productivity growth, while others have not? Why has agriculture in so many FSU nations continued to perform so poorly?

In addition, we will address questions about the process of reform. Why has land restitution predominated in Europe but not in Russia or China? Why did institutions of exchange collapse in the non-Asian economies in the early stages of reform but continued to function in Vietnam and China? What explains the apparent divergence in the performance effects after the first year of reform in China and Vietnam, on the one hand, and much of the rest of the transitional world on the other? In particular, how have land reform and rural input-supply/procurement enterprise restructuring affected productivity? Which institutions of exchange and contracting have or have not emerged, and why? How has the structure of the economy at the outset of transition, and other initial conditions, affected the transition process?

To meet our objectives and answer some of the questions, we will begin by laying out the record on performance — examining the main bodies of data that demonstrate the changes in agricultural output, income, and productivity in the years after transition. In doing so, we will show how some of the countries have recorded similar performances, while others have developed quite differently. We will identify several “patterns of transition” based on these performance indicators and much of our subsequent discussion will analyze the success of transition according to these classifications.

Next, as the first step in our search for answers as to what explains these different patterns, we examine differences in the points of departure of the transition countries as well as the nature of the policy reforms that have affected agriculture. The *initial conditions* that we hypothesize may explain part of the transition period’s performance include the nature of agricultural technology at the beginning of the reforms (its scale; its labor intensiveness; etc.), the

structure of the economy (the extent of industrialization), the extent of collectivization, and the magnitude of trade distortions. The *key policy interventions* that we should expect to affect agriculture's performance during transition include land right reforms and farm restructuring; price and subsidization policies; the approach to the liberalization of agricultural commodity and input markets; general macro-economic and general institutional reforms; and the attention of sectoral leaders to the level of new and maintenance-oriented public goods investment (in agricultural research, irrigation, roads, and other infrastructure projects).

After documenting the dramatic differences in initial conditions and in reform policies among the transitional countries, we seek to demonstrate which of the differences determine the path a country's agriculture takes. In other words, we offer answers to the question why transition in agriculture in some countries has been successful and not in others. Here, we seek to generalize about the main causes for differences between the countries and the mechanisms that have affected performance. In particular, we argue that the debate on the optimality of Big-Bang versus gradualism oversimplifies the reform problem. The empirical evidence suggests that the road to a successful transition is more subtle and successful transitions in Asia and Europe have elements of both gradual and radical reforms. To explain the reform successes and failures we emphasize the role of the political environment in the early reform years and the potential for agricultural growth that exists at the start of reforms. We find that both have not only influenced the choice of the reform policies, but also the effect of the reform policies. We also conclude that the initial level of price distortions and the pace of market liberalization were especially influential in explaining differences in the early stages of transition but that the influence of the factors has diminished over time. Investment, land rights, and farm restructuring policies, in contrast, are assuming a more important role as the agricultural reforms have matured.



In the last section we draw policy implications and lessons from the agricultural transition experiences. We argue that one should be careful about which indicator to use for measuring success and failure of transition. We conclude that all reform strategies in order to be successful need to include some certain policy ingredients (such as continued investment, etc.). However, a powerful lesson is that although all the pieces are ultimately needed, there is a lot of room for variation in the form of institutions that can be successful, and optimal policies and institutions may vary according to initial conditions. In other words, there is no single optimal transition path.

*In the rest of this proposal we sketch out in greater detail some of the main facts to be explained and summarize the issues and material which we will develop in greater detail and scope in the full paper. The full paper will also include a series of tables and figures with quantitative indicators of performance, policies, initial conditions, and other statistical estimates of some of the concepts that we will be examining. This proposal includes a non-exhaustive list of key references. We will integrate additional material and references in the full paper.*

### **Growth, Decline, and Recovery during Transition**

Whatever the reason—either initial conditions, reform policies, or both—remarkable differences can be observed when examining the performance of agriculture in the transitional countries during the first decade of reform (Figure 1). From the start of the reforms, output increased rapidly in China. After 10 years output had increased by 60 percent. In Vietnam, output also rose sharply, increasing by nearly 40 percent during the first decade of reform. Output trends followed a different set of contours outside of Asia. Production fell sharply in the first 5 years of transition in both the CEECs and in the FSU countries. Since the mid-1990s, output

stabilized in most of the CEECs. In Russia and Ukraine, however, the fall continued declining to nearly 50 percent of pre-reform output.

Productivity trends, while similar to those of output in certain countries, diverged in others (Figure 2). For example, for the entire reform period, labor productivity in the agricultural sectors of China and Vietnam, measured as output per farm worker, rose steadily like output. The productivity trends for Russia and Ukraine also mirror those of the nation's output: labor productivity fell over 30 percent between 1990 and 1999. Productivity trends for some CEECs, however, differ from those of output. For example, output per worker almost doubled over the first decade after transition in Hungary. Labor productivity also rose strongly in the Czech Republic and Slovakia in the 1990s, even as output was falling.

While reliable estimates on total factor productivity (TFP) are scarcer, the general picture is similar as the one described by the labor productivity trends. In China and Vietnam, TFP rose during the reform era (Fan, 1997; Huang et al., 2000; Pingali and Xuan, 1992). In several CEECs, TFP in crop production started increasing early on in transition (Macours and Swinnen, 2000a).

### **Transitional Success and Failure and Reform Policy**

What has been behind the observed trends? To the extent that we can better understand the sources of growth, decline, and recovery, we may be able to more precisely predict what is in store for the future and derive more accurate policy implications. We start by examining initial conditions, since they may affect how a country proceeds after a change. Next, we examine the impact of policy actions taken by reforms: the record on property rights, price and subsidy policies, and a large number of measures that can be labeled as actions taken to promote (or

retard) the emergence of institutions of exchange, including markets. The final subsection briefly examines the record of countries in the management of agricultural investment.

### **Initial Conditions at Reform's Onset**

Although comparisons of economies in transition are reasonable, given their common reliance on central planning and shared transition era goals of liberalization and faster growth, differences in initial conditions at the outset of reform may temper comparisons. In general, the Asian economies had a much lower levels of development than the transition countries in Europe. For example, the share of agriculture in employment was more than 70% in China and Vietnam. In contrast, less than 20 percent of the working population in Russia and most of the CEECs is employed in agriculture. The demographic structure of the countries also affects the way output is produced. Farms in China and Vietnam are much more labor-intensive. The man/land ratio was more than five times higher in Asia than in Central Europe or Russia (Macours and Swinnen, 1999).

The length of time under collectivized agriculture also may affect transition. Although pre-transition agriculture was characterized by the dominance of large-scale farms in almost all the countries,<sup>1</sup> the collectivization of agriculture occurred early this century in Russia, while only after the second World War in the CEECs and East Asia. Experience with private farming and any understanding of markets was more likely completely lost during several generations under Communism in most of the FSU nations. In contrast, private farming survived in rural households in many other countries.

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<sup>1</sup> Only in former Yugoslavia, Poland, Laos and Myanmar a majority of agricultural land was managed by individual (family) farms during communism.

Land ownership prior to reform also differed among the countries. In China, the collective retained legal and effective property rights both before and after the implementation of HRS. In Russia and other FSU countries, however, land was nationalized during Communism. In many CEECs much of the collective farm land was still legally owned by individuals, although effective property rights were controlled by the state or the collective farms (Brooks et al., 1991). Paradoxically, while these legal differences probably had little impact on the operation of the land in the various countries in the pre-reform era, they had a much stronger effect on land reforms afterward liberalization. In particular, pre-reform ownership can be quite closely linked to the demand for land restitution in the CEECs (Swinnen, 1999).

Finally, pre-reform tax, subsidy and trade policies differed significantly among the countries. In China and Vietnam, authorities heavily taxed agriculture (Lardy, 1983; Sicular, 1988; Huang, Lin, and Rozelle, 1998; Green and Vokes, 1998). In contrast, leaders in most of the CEECs and the FSU nations supported agriculture with heavy subsidies (Green and Vokes, 1998; USDA, 1994; Tomich et al 1995).

Moreover, while some of the taxes and subsidies were direct, some differences in rates of taxation and subsidy were related to trade policies. Trade policies also affect the degree of access that consumers and producers have to world markets and how much producers are subject to global competition. For example, FSU countries were strongly integrated into the CMEA system, and traded mainly with other communist countries. The share of CMEA exports as a percent of GDP amounted to around 30 percent in Russia and Ukraine. The CEECs also traded with other countries, but CMEA exports still made up around 10 percent of GDP in countries like Hungary and the Czech Republic. In contrast, China and Vietnam mainly traded with non-CMEA countries.

## **Institutional and Policy Reforms**

### *Property rights reforms and decollectivization*

The reforms in China and Vietnam started with radical decollectivization and reshuffling of property rights. Reformers in China re-allocated land rights from the communes, brigades and teams to rural households and completely broke up the larger collective farms into small-scale household farms. The resulting changes in incentives triggered both strong growth of output and a dramatic increase in productivity (McMillan et al. 1989; Lin, 1992; Huang and Rozelle, 1996). Doi Moi, Vietnam's reform program in the 1980s closely followed China's strategy and land reform also positively affected the nation's agricultural output (Pingali and Xuan, 1992).

In contrast, many large-scale farm organizations survived the transition in the FSU and the CEECs. Large-scale farms, under a variety of legal organizations, still cultivated more than 75% of the land in Russia, Ukraine, most of the FSU nations, and a number of CEECs five years after the start of the reforms. The break-up of the former collective and state farms into individual farms has been strongest in countries in which the collective and state farms were least efficient and most labor intensive (Mathijs and Swinnen, 1998). Importantly, the shift also was higher in regions where at least some private farming survived during Communist rule.

Although the share farmed by large corporate farms has fallen gradually over the past decade in most transition countries, it is a slow process and it is not obvious that they will disappear in the near future. In some countries, such as Russia and Slovakia, policies still heavily favor large corporate farms. Institutional barriers also constrain producers from moving into individual farming (Lerman, 1999). The corporate farms also may be providing services that provide up- and downstream activities substituting for missing markets (Deininger, 1995). In

many countries, such as Hungary and Bulgaria, a dual farm structure is emerging with some large-scale farms and many small-scale individual farms (Sarris et al.1999).

One of the main differences between Russia and Ukraine where productivity fell and some of the CEECs, such as Hungary and the Czech Republic, where productivity increased strongly, is not so much the scale of the farm operations, but rather the degree to which their management structure was restructured. In the CEECs, farm enterprise budgets were hardened and on-farm decision making became independent and primarily concerned with turning a profit. Restructuring induced sharp shifts in input use, effective management reforms, and efficiency increases (Mathijs and Swinnen, 2000). In contrast, farm restructuring in Russia and in several other FSU countries has been mostly superficial. For example, while the outside imposition of production plans is officially abolished, local authorities continue to influence farm management through informal relationships (Csaki and Lerman, 1997). The inability to restructure farms has caused a decline of farm efficiency (Johnson et al. 1994; Sedik et al. 1999).

Differences in restructuring are linked to land reform. In many CEECs land was either restituted to former owners, distributed to farm workers in delineated boundaries, or leased to new farms. Although the land reforms in these countries were complex and difficult to implement, they ended up with stronger and better defined property rights for the new landowners than most of the FSU countries. In the FSU countries, in contrast, land was distributed as paper shares or certificates to workers of the collectives and state farms. Individuals can not identify the piece of land that belongs to any given share, causing weak land rights for individuals and undermining their ability to withdraw land from the large farms. As a result, family farming is emerging only slowly, and large farms have little incentive to restructure (Lerman, 2000).

Hence, there have been significant differences in the approaches of countries to land reform and the creation of property rights in rural areas. Good rights and the incentives they created certainly were behind (and will continue to affect) positive performance (Pingali and Xuan, 1992; Rozelle, Li and Brandt, forthcoming; Macours and Swinnen, 2000a,b). Poor ones undoubtedly contributed to the poor performance and will continue to adversely affect future performance.

*Price, subsidy, and trade reform*

All transitional countries also experienced some form of price and subsidy policy reforms. In China, leaders administratively increased agricultural output prices following decollectivization. The rise in prices in the late 1970s and early 1980s partly explains the increase in farm profits during this period, as it did in Vietnam a few years later (Sicular, 1988; 1995; Huang and Rozelle, 1996; Rana and Hamid, 1996).

Price reform was much bolder outside of Asia. In most CEECs, leaders dismantled planning system by decontrolling agricultural prices and dramatically reducing subsidies in the early 1990s (Hartell and Swinnen, 1998; Trzeciak-Duval, 1999). In Russia, reformers also liberalized prices in the early reforms, although substantial subsidies to agriculture have continued. Unlike in the case of Asia, however, reforms did not lead to a large price increase and stimulate production. Falling incomes put downward pressure on domestic prices. In many countries the combination of the fall in the real price of output and the rise in the real price of inputs led to a crisis for the agricultural sector (OECD 1998).

Changes to the trading regime occurred at the same time and were equally decisive in all but the Asian economies. The collapse of the CMEA trading system led to trade disruptions in

many countries, especially in those where CMEA trade integration was strongest. Access to some inputs was disrupted. The shift to hard currency payments for imports and falls in income led to a reduction in the demand for foreign agro-food products. In contrast, the early trade reforms saw only limited changes in China (Huang and Chen, 1999). Vietnam also slowly liberalized trade, but rice, one of the nation's most important post-reform export products received special treatment by leaders.

*Developing institutions of exchange and contract enforcement*

Disruptions in the agri-food chain compounded the agricultural crises in the countries of the FSU and the CEECs (Hobbs et al. 1997). Pre-transition systems were strongly vertically integrated. The central planner directed both sides of transactions and enforced contracts involving exchanges between the various agents in the chain. The reforms removed state control over planning and resource allocation (Blanchard, 1997). In conjunction with reform in the rest of the economy, the strategy in agriculture involved rapid privatization and restructuring of up- and down-stream enterprises. However the removal of the central planning and control system, in the absence of new institutions to enforce contracts, distribute information, and finance intermediation caused serious disruptions and negatively affected output throughout the economy (Blanchard and Kremer, 1997; Gow and Swinnen, 1998; Roland and Verdier, 1999; Stiglitz, 1999).

In this aspect China's reforms deviate the most from those in other parts of the world (Park et al., 2000). In the initial phase of property rights reforms, Chinese leaders chose not to disrupt agriculture any more by reforming the up- and downstream sectors. In essence, the procurement and input supply systems remained fully under the control of the state during the



early reforms. The same state-run input supply channels that provided inputs to the communes channeled inputs to farmers. Likewise, the same procurement system that purchased the output of the commune and transferred it to the cities remained virtually unchanged and banks continued to finance these transactions. Sector officials carried out transfers of food from producer to consumer regions according to nearly the same plan as before reform.

Even though the maintenance of the system of planned procurement and supply in China caused substantial allocative irrationalities, the benefit of such a strategy was that it did provide farmers access to inputs and product outlets during the period of property rights reforms and farm restructuring (Rozelle, 1996). With improved farm productivity it actually allowed increasing the supply of food to urban consumers. The leadership's emphasis on stability mandated the gradual strategy (Putterman, 1993).

The deregulation of the input and output marketing was only allowed to take place at a more gradual pace several years after the initial reforms (Sicular, 1988; 1995; Perkins, 1994). The gradual liberalization strategy, called the dual track pricing system, allowed enterprises to reap the informational benefits from price liberalization while avoiding the disruption associated with the breakdown of the planning system. It also allowed space for traders to slowly develop networks and figure out ways to finance commodity trade (Watson, 1994).

The importance of creating new institutions to facilitate the exchange of inputs for outputs and the trade of commodities can also be seen by observing the differences in the recent performance of the CEECs and Russia. While output in Russia continued to decline, the output fall in the CEECs halted as these economies had begun to find new ways to undertake transactions in the food economy (Gow and Swinnen, 1998). In other words, an important

source of increased productivity in transition economies has been the emergence of new institutions for information, product exchange, and contract enforcement.

Such institutions have come in a variety of forms. The most successful ones have frequently depended on private enforcement mechanisms within the framework of specially designed contracts or institutional arrangements (McMillan, 1997; Gow et al., 2000). Contracts between private agents act as substitutes for missing or imperfect public enforcement institutions (Klein and Murphy, 1997).

Successful institutions have offered enough flexibility to allow producers, suppliers, and buyers to adjust to the continuously changing environment during transition. For example, while land lease contracts initially often took the form of short, single-season informal contracts, gradually they have evolved into more formal and longer-term contracts, reflecting reduced uncertainty and improved understanding of the market environment by both the owner of the land and the tenant. Leasing of equipment is another example of an institutional innovation adapted to transition as it mitigates farms' collateral problems in financing new equipment.

Foreign direct investment (FDI) has played an important role in the reemergence of the institutions of exchange in some CEECs (Foster, 1999; Gow and Swinnen, 1998). Beyond supply of capital, foreign firms have offered producers a number of arrangements to encourage greater production and marketing and to overcome constraints that have limited economic activity since the onset of transition. For example, food processors have negotiated contracts with banks and input suppliers to provide farms with inputs that enable them to deliver high quality products to their company. Similarly, input supply firms have been involved with assisting farms to find guaranteed outlets for their products in order to stimulate farms' demand for the company's products.

*General reforms and linkages with the rest of the economy*

While an analysis of general transition is beyond the scope of this paper, it is impossible to ignore entirely the economy outside of the agricultural sector because it has had important effects on agricultural transition. General reforms have affected agricultural transition in a variety of important ways. We focus here on some key aspects.

First, macro-economic stabilization, including the reform of fiscal and monetary institutions, is an essential element for sustainable growth. A recent comparison of overall performance of the CEECs and FSU countries concludes that rapid overall liberalization and sustained macroeconomic stabilization have laid the basis for gradual institutional change in the more advanced transition countries (EBRD, 1999). At the same time, the report states that the persistence of soft budget constraints in less advanced countries has jeopardized stabilization.

But far from disappearing, the state has a major role to play in the formation of macro-economic policy. Transition from a socialist to a market economy does not imply a withering away of the state, but rather a fundamental redefinition of the role of the state in the economy (Stiglitz, 1993). The state must play a strong and leading role in developing market institutions. Interestingly, both in China and in the most advanced CEECs, the state has been able to do this, although often in different ways. In Russia, however, the state has not redefined its role. Instead, in many aspects, the Russian state has withered away and has been unable to fulfill some key roles for the development of a market economy (Schleifer, 1997; Csaba, 2000). The state has eroded in establishing the rule of law, as private enforcement has gained the upper hand in Russia (Hay and Schleifer, 1998). In many sectors, non-state entities have begun to collect taxes and establish the basic conditions for macro-economic stability. For example, estimates put

the share of transactions which are carried out as barter (mutual nonpayment) or with money substitutes at 75 to 85 percent in Russia (Bruszt, 2000). Obviously these developments have strongly affected the climate in which the agricultural transition has taken place, since farm producers, like agents in any industry, need stability, clear legal codes, and can benefit from investments made by the state.

The nature of a good macro-economic environment may also attract or deter outside interests from entering the local economy. For example, the flow of FDI and foreign technology and know-how into the agri-food chain has been important in the CEECs, but less so in Russia. One of the main reasons for the high level of outside interest in some CEECs has been narrowed to the progress of the general reforms, the macro-economic situation, and the prospect of EU accession (Brenton and di Mauro, 1999; OECD, 1998; Selowski and Martin 1997).

Macro-economic stabilization and reform progress have not only improved access to foreign capital, technology, and know-how, but also access to domestic credit and capital sources for the farms. Credit markets have developed notoriously slow in the CEECs and FSU countries. Disruptions by privatization and overall restructuring severely limited farm credit access for investment purposes and working capital (Calomiris, 1993; OECD 1999). Poor credit has been blamed for some of the overall reduction in farm output. The success of the recovery in some CEECs is at least partially due to improvements in the capital situation for the farms.

Enterprise privatization also has had important impacts on agriculture. While land reform and farm privatization procedures were specific to agriculture, the privatization of companies involved in supplying inputs (fertilizer, pesticides, etc.) and credit to farms as well as food processing and distribution companies followed the general privatization procedures, a process that has differed significantly among countries. In a review of the successes and failures of

privatization, Kornai (2000) concludes that three aspects of privatization strategies contributed to successful privatization. First, it is necessary to create favorable conditions for bottom-up development of the private sector, including the creation of new (so-called *de novo*) companies. Second, selling of state companies to strategic investors has led to more satisfactory results than strategies based on some form of give-away, e.g. through vouchers. Finally, *de facto* privatization occurred by hardening the budget constraints of companies. All of these strategies have had a major impact on the performance of the agri-food sector. For example, Hungary, a country that has sold most of its food processing companies to foreign investors, received the highest per capita inflow of FDI in the agri-food sector, and has consequently experienced some of the greatest growth in output and productivity (OECD, 1998).

Finally, external economic conditions, as well as government policies, have affected the outflow of labor from agriculture during transition, a trend that has major implications for agricultural productivity and rural incomes. Improvements in labor productivity have been strongly correlated with the outflow of labor from agriculture. In China, government restrictions on rural mobility constrained the outflow of labor from agriculture until the mid-1980s (Taylor, 1993; Carter, 1997). The development of township and village enterprises (TVEs) created non-agricultural employment in the rural areas which was crucial for labor productivity to increase in agriculture after the productivity enhancing effects of decollectivization (Oi, 1993; Putterman 1992). In the FSU nations and some of the less developed CEECs household food security concerns limited the labor outflow from agriculture, or in some cases induced an inflow during early transition (Seeth et al. 1998). However, some of the most important labor movement constraints in Russia and Ukraine today take the form of the social services, housing and health care (Brooks et al., 1996). Mobility costs for workers are high due in a large part to poorly

developed housing markets. Moreover in Russia most companies are now paying wages in kind and through fringe benefits rather than cash. Because most of the goods and services provided cannot be converted into cash, in some cases workers cannot finance the costs associated with moving to other regions (Friebel and Guriev, 1999).

### *Public Investment in R&D, Water, and Infrastructure*

As argued above, a key aspect of the success of the reforms in creating sustainable agricultural growth is the reform of the state itself, and its role in the economy. This does not apply only to its role in the creation of market institutions, but also regarding public investments (Stiglitz, 1993). In pursuit of institutional reform of rights and markets, and in the wake of financial and fiscal restructuring that frequently cause severe budget shortfalls, transitional governments have often reduced investments in and maintenance of the infrastructure that agriculture needs to be productive. In China, for example, central government investment in water and agricultural research plummeted in the first decade after reform. Several studies show that total factor productivity has been negatively affected by reduced investments (Huang and Rozelle, 1996; Fan and Pardey, 1997; World Bank, 1997).

Observations from almost all transitioning countries report this fall in investment (Csaki, 1998; Unger, Chan, and Kerkvliet, 1999). One needs to be careful, however, to equate a drop off of government investment as a net fall in total investment, since in some cases the private sector (either domestic or foreign) will pick up the slack. In other cases, such as in Vietnam, instead of investing in its own agricultural research and development, its new open door policy has allowed better access to the international agricultural research system's technology.

Despite the possibility in some instances of substituting private for public capital, in agricultural some of the most expensive, but most productivity-enhancing projects are public goods. In these cases, it will be the role of the state to make the investments. In fact, if one examines agriculture productivity in the long run, by far most of the rise in TFP of successful agriculture economies in both developed and developing economies ultimately depends on investments in water control and public agricultural research and extension.

### **Why Have Some Countries Succeeded and Others Not?**

One of the most often debated types of question is why have some countries adopted one set of policies or a certain reform strategy and others have not. In its most fundamental form, this is a question of what determines a country's choice of reform strategy. While there are a number of idiosyncratic factors that might be identified as the main reason for adopting a policy, we believe that the political necessity, or the nature of a country's political economy, and initial conditions frequently determine policy choice. In this section we examine how political ideology and initial conditions help determine the choice of reform strategy. Before we do, however, we first want to raise a cautionary warning about how when addressing questions like this we often oversimplify a nation's reform strategy, trying to group countries into a well-defined category. Using the example of Big Bang versus Gradualism, we show how the choice of reform strategy is not usually clear cut, but in reality is often more subtle.

### **Big Bang or Gradualism or something else?**

After the fall of the Berlin Wall, the debate on optimal reform for transition countries focussed on policy sequencing. China was often referred to as an example of a successful reform

strategy, which combined an initial reform of property rights with a gradual liberalization process and thus created growth without the negative effects of disruptions. Others argued that the initial conditions and the economic structure of China were so different from Russia and CEECs that little could be learned from China and that the best policy in those countries was to liberalize and reform everything at once: the so-called “Big-Bang” option.

Looking back, the insights emerging from the experience of transition countries so far suggest that the road to successful transition is more subtle. Given the extraordinary growth in China’s economy, the resulting increase in income, and the wholesale reduction of poverty, the experience in China between 1980 and 1995 has been referred to as possibly “*the greatest increase in economic well-being within a 15 year period in all of history*” (Fischer, 1994,, p. 131). Even if such a statement is only a fraction correct, it is hard to dispute the conclusion that China’s so-called “gradualist approach” to reform has been successful.

However, several studies comparing economic performance of transition strategies in the non-Asian economies seem to come to a different conclusion. If one takes into account differences in initial conditions and external factors, such as regional conflicts, those countries which have reformed earliest and most radically are now doing best (Aslund et al, 1996; de Melo and Gelb, 1996; de Melo et al., 1997; Fischer et al. 1996; Wyplosz, 2000). Such a finding, if true, would suggest the superiority of radical reform. Based on our analysis, we believe that, first, the successful transitions in Asia and Europe have elements of both gradualism and rapid, one-stroke reform, and second, that to reconcile these apparently conflicting conclusions one needs to look at both the political environment and the initial conditions at the time of reform.



## **The political economy of transition**

In China, the successful reforms were initiated by a Communist Party that remained and continues to remain very much in charge of the nation. Especially in the early stages of reform, there was relatively little political change that coincided with the economic initiatives. Initially, agricultural reforms were implemented by the Communist Party as an attempt to reduce pressure from the rural population following dramatic failures of the Cultural Revolution. Although there was a turnover in power from Mao to Deng that gave the opportunity to implement a new set of policies, the directives and implementation of the reform measures were designed, tested, and revised within the context of a continuing government-party hierarchy.

Somewhat paradoxically, while the reforms in China are often referred to as “gradual,” the initial property rights reforms in some ways led to more radical reform of land use rights and more complete decollectivization than in either Russia or CEECs. Because of the sharp, decisive change, affecting the incomes and livelihood of more than 70 percent of the population, the agricultural reform had a tremendous impact on the whole economy. The rise in food production and increases of supplies in the countryside and city took the pressure off the government. In addition, the rise of incomes created an immediate surge in demand for non-food products. Ironically, these actions, which initially looked like moves away from Socialism, probably did more to consolidate the rule of the Communist Party than any other measures taken during this period.

In contrast, pre-1989 attempts by Communist Parties in some European countries to give more autonomy to collective farms were much less radical and had little impact. Even if agricultural reforms had been successful, fewer people would have been affected since only a

relatively small share of the population was still employed in agriculture, and they were unlikely to satiate the demand for significant changes in the rest of society.

Therefore, with the dramatic political changes beginning in 1989, the pressure for widespread reforms that would have a significant impact on the general population caused a reform strategy that reached far beyond the farm sector. The reforms, as we know, quickly expanded to include the privatization and restructuring of all enterprises in the economy, including but not limited to food retailers, agro-processors, and agricultural input suppliers. The complete dismantling of the entire planned economy inevitably implied the disruption of the vertically integrated state controlled agro-food chain. Furthermore, the structural adjustments needed to correct the badly distorted structure of input and output called for creative destruction. As Kornai (2000, p.4) argues, *"[b]ecause destruction is rapid, whereas creation proceeds more slowly, the two processes led to a deep recession."*

But while this is a general characterization of what happened in the non-Asian transition states, in fact, the speed and the extent of the reforms differed dramatically between CEECs and the former Soviet Union. Perhaps unsurprisingly, political and administrative feasibility played an important role. As Wyplosz (2000, p. 1 ) concluded: *"With hindsight, the old debate, Big Bang versus gradualism, is more a question of feasibility"*.

In terms of political feasibility, the one factor that certainly has played an important role in determining the speed and extent of reform is the political and social consensus to move towards a market economy and democratic political institutions. For a variety of political, geographical, and cultural factors, the consensus was much stronger in CEECs, including the Baltic countries. Simply put, after decades of Soviet domination these countries were strongly

motivated to move towards “the West.” The same push and lesser opportunities made such radical moves less compelling for Russia.

In terms of administrative feasibility, optimal policy sequencing of a gradual reform strategy, especially in more developed economies in Europe (versus China), would have required extensive information on the transformation process and the economy. Most observers question the feasibility of plotting out a rational, systematically-executed reform path ex-ante. As McMillan (1997, p.232) puts it: *“If it were possible to plan the transition it would have been possible to plan the economy.”*

Moreover, in some key agricultural reforms, institutional constraints and explicit political objectives affected the final choice. For example, one of the most hotly disputed policies in agriculture was land reform. In CEECs the proposal to restitute farm land to former owners, many of whom were no longer active in agriculture, was vehemently opposed by collective farm managers and workers, and by many economists and advisors who supported land-to-the-tiller policies. However, a combination of institutional constraints -- as individuals had retained nominal title of their land in most CEECs any other land reform procedure would have required land expropriation by the market-minded governments -- and political objectives -- in the Baltics restitution ensured that Russian immigrants would be excluded from land ownership -- made land restitution the most common process of land reform in Europe from the Baltics to the Balkans (Swinnen, 1999).

### **Initial conditions and the patterns of transitions**

Although other factors also played a role, the initial technology played a decisive role in creating the success of the break- up of China’s collective farms (Sachs and Woo, 1994).

Agricultural production in China was much more labor-intensive than in CEECs or Russia. With labor intensive technology, the cost of a break-up of the collective farms in terms of losses of scale economies was smaller, and the gains from improved labor incentives from the shift to family farms were larger.

The length of time under Socialism also matters. Central planning and Communist rule was imposed for a much longer time in Russia and most other former Soviet states and has certainly affected both the emergence of new institutions and the response of individuals to new opportunities and incentives. The lack of experience with market institutions decreases the demand for institutional change. Furthermore, surveys confirm that responses from households and individuals in regions where a tradition of private farming existed (or survived during Communist rule) clearly differs from where this was not the case.

Similarly, pre-reform trade patterns had an important impact. Repkine and Walsh (1999) show that across sectors recovery in the CEECs is primarily driven by companies that had links with Western markets before the reforms. Investment demand shocks marginalized companies and sectors producing for CMEA markets. At the same time, a gradual expansion in products of companies traditionally producing for Western markets occurred. With the FSU countries depending much more on CMEA markets than the CEECs, countries like Russia and the Ukraine experienced a stronger disruption of their demand system, and consequently suffered greater output declines.

Finally, the pre-reform differences in the relative price faced by producers relative to those that prevailed in international markets can account for a significant part of the initial differences in performance of transitional agricultural economies. In China, shifting prices more towards international levels meant a favorable rise in the output to input price ratio for many

crops. The pre-reform economy heavily taxed the farm sector. When prices were moved up towards international price levels, producers responded favorably. In contrast, in CEECs and Russia, where agricultural producers were heavily subsidized under the old regime, the removal of subsidies meant a steep plunge in the real price of output relative to inputs. Hence, even without the collapse of procurement and supply channels, one would expect rational producers in Europe and Russia to cut back on input use and reduce output.

So, does the importance of initial conditions reduce the responsibility of reform era leaders for the poor performance that some transitioning countries have suffered? In some sense, the answer has to be yes. Reformers inherited systems which differed so much that in some cases efficiency-oriented reform led to large falls in output while in others, reforms issued in the same spirit resulted in output increases.

However, initial conditions can not wholly explain past performance and to an even greater degree will not determine the future of these economies. Initial price levels, technologies and political environments in some sense can be thought of as only establishing the boundaries within which the reforms take place. In almost all countries, there has been room for being bold or for being timid. Moreover, the influence of initial conditions will decline over time. Hence, while the nature of the policies mattered in the past, it will matter more and more in the future. For no other reason, then, is it worth trying to take stock of the lessons we have learned from transition.

### **Lessons From Agrarian Transition**

Considering the above discussion, the first lesson is that we should be careful about which indicator we use to measure transition performance. If we use an indicator of allocative

efficiency instead of output to measure success, it is less clear that the European agricultural transitions were such a failure when compared to those in China and Vietnam. If prices need to reflect long-run scarcity values of outputs and inputs, then efficiency required that output prices were raised in East Asia, a move that naturally would lead to higher output. Likewise, when subsidies were removed, rational producers should use less inputs be used, actions as seen by the record in the CEECs and Russia where the ratio of output to input prices fell sharply, obviously led to falling output in these countries.

But the lessons go far beyond measuring success or failure. More fundamentally, it does appear from the evidence on the collective transition experiences that any reform strategy in order to be successful needs to include some essential ingredients. In other words, ultimately successful transition requires a complete package of reforms. All countries that are growing steadily a decade or more after their initial reforms have managed (a) to create macro-economic stability, (b) to reform property rights, (c) to create institutions that facilitate exchange, and (d) to develop an environment within which contracts can be enforced.

We clearly see the problems of not making progress in all areas. For example, when rights are not clear, as in Russia, producers have little incentive to farm efficiently or to invest and restructuring is constrained. We see in other places that the creation of strong individual property rights is not sufficient. For example, in Poland in the initial years after reform, farmers had secure rights over their land. But, their inability to access inputs or to sell output prevented them from reaping the gains of specialization and improved labor effort. Both output and productivity growth performed poorly. In general, where both rights and markets came together we have seen productivity rises; where not, decline continued and/or subsistence farming proliferated.

That said, however, one of the most powerful lessons is that although all of the pieces of the reform package are needed, there is a lot of room for experimentation and variation in the sequencing, and in the form of the institutions that appear to provide incentives and facilitate exchange and contracting. In other words, there is no single optimal transition path. Instead, the optimal transition strategy needs to take into account institutional and political characteristics of each country.

Moreover, while all of the ingredients are ultimately needed, they do not need to come all at once. For example, in China, reform without collapse was possible by introducing property rights reform first and gradually implementing policies that liberalized markets and facilitate decentralized exchange. Such sequencing helped China grow rapidly in the initial years and steadily since. In CEECs, after the initial politically-led disruptions, maturing property rights and the gradual emergence of markets and other ways of exchanging goods, services, and inputs have lead to productivity growth.

Furthermore, in the case of property rights, incentives can come in many forms. At least during transition, full privatization in the initial period was not always needed. Sometimes political economy realities limit the scope for privatization, such as in the case of land ownership in China where only user and income rights were privatized – and then even imperfectly. However, the increase in the rights to the residual led to improvements in farmer decision making and resulted in major increases in output and productivity.

Additionally, regarding economic organization, there are many examples of hybrid forms, whereby the state-run agency or former collective has been able to continue to operate, and do so more efficiently since its members or managers have been granted clearer income, use, and transfer rights. For example, in China the state was able to use commercialized state input

suppliers to create competitive fertilizer wholesale and retail markets (Rozelle, 1996). Similarly, in the CEECs, some corporate farming organizations which are never observed in Western economies, and which many experts had, *ex ante*, considered to be inefficient, have performed close to the efficiency level of family farms (Mathijs and Swinnen, 2000).

Successful institutions of exchange—nascent markets, forms of contracting, etc.—also have many hybrid characteristics. In fact, some of the most successful transitions have not gone straight from planning to decentralized market-based exchange. Markets, as it turns out, are emerging, but doing so quite slowly. China's experience demonstrates not only that, when politically feasible, partial reform in a sectoral sense (i.e., liberalize some products but not necessarily all) and two-tier pricing (i.e., a system of resource allocation half through planned transfers and half through the market) can end up creating markets that make the liberalization of the partially reformed sector successful, but also that such policies can create a trading class that leads the push to expand the reforms and ultimately eliminate the need for planning.

Whether considering institutions that create and maintain property rights or those that facilitate exchange, policies should accommodate institutions that are flexible. Flexibility is needed because transition is so uncertain. Moreover, successful transition may trigger rapid growth which itself will require institutions to adapt quickly. For example, in land markets, the initial focus should be on stimulating short term land leasing, an institution much more adapted to transition circumstances. Later on, long term leases and land sales should develop. In general non-traditional and flexible institutions have been more successful.

A final lesson that is clear from the case of China is that in the longer run, investments in public goods and infrastructure are needed to continue productivity growth initiated by the reforms. Regardless of how successful the initial reforms are, once producers have good property rights and incentives, and once exchange is being facilitated by functioning institutions, sustained rises in productivity will depend on investments in agricultural



research, extension and other infrastructure projects, such as investments in water control and roads, that individual farmers will not be able to finance by themselves. In the long run, agricultural growth will suffer if such investments are ignored during transition.

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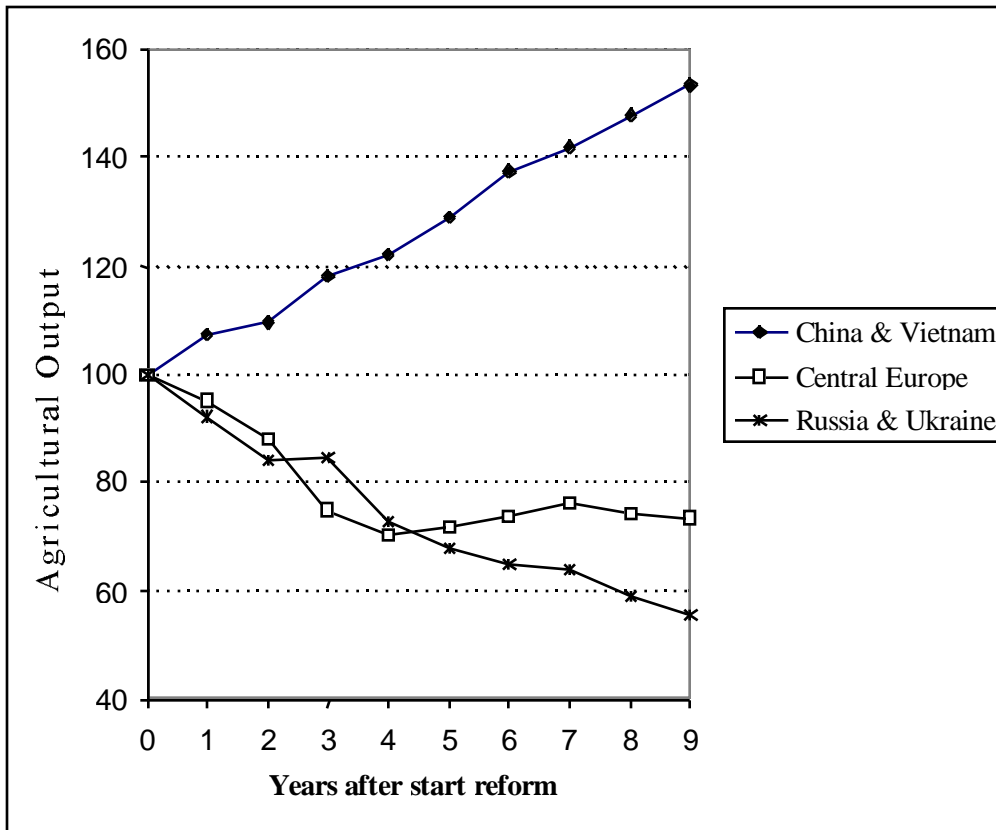
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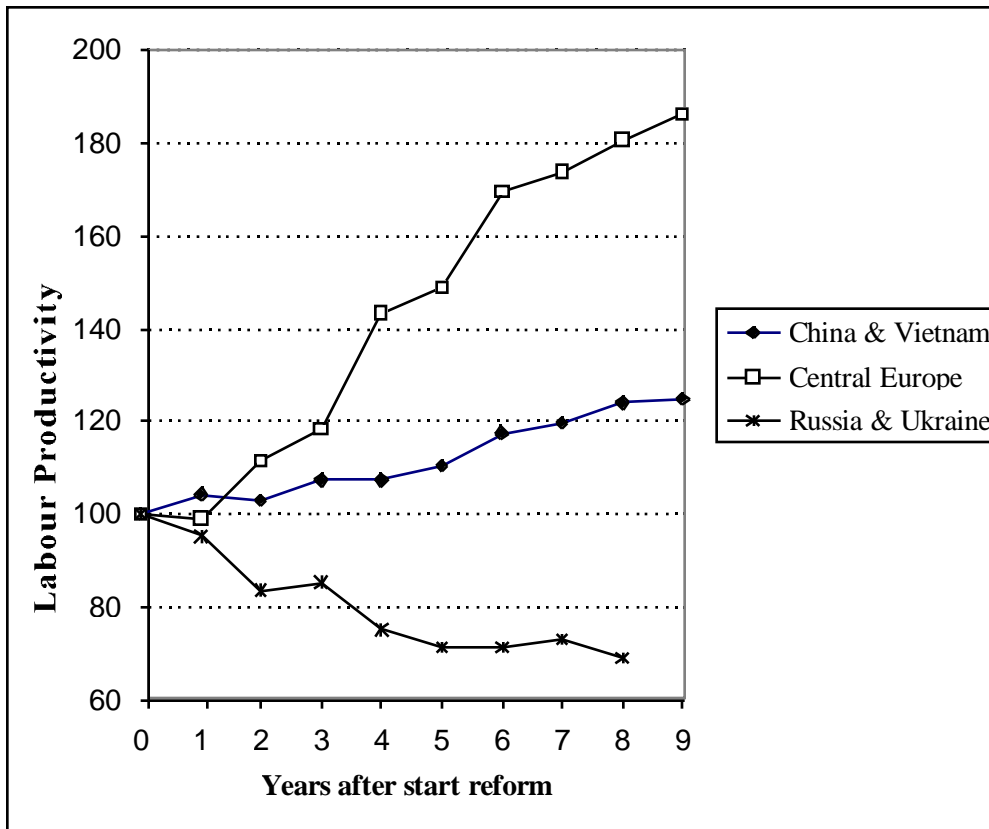
**Figure 1: Agricultural output during transition \***



\* China: 1978-1987; Vietnam: 1985-1994; Central Europe: 1989-1998 (average of Hungary, Czech Republic, and Poland); Russia and Ukraine: 1990-1999

Agricultural Output

**Figure 2: Agricultural labor productivity during transition\***



\* China: 1978-1987; Vietnam: 1985-1994; Central Europe: 1989-1998 (average of Hungary, Czech Republic, and Poland); Russia and Ukraine: 1990-1999.