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*Agricultural Labor Adjustments in Transition Countries: The Role of Migration and Impact on Poverty**

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There are several remarkable aspects of the changes in agricultural employment during transition in Central and Eastern Europe (CEE) and the Former Soviet Union (FSU) (henceforth referred to as "transition countries"). First, transition had a dramatic effect on agricultural employment in many countries: labor use in agriculture changed more than 50% in several countries during the first decade (figure 1). Second, the changes were very diverse. Labor use in agriculture declined by half in countries such as the Czech Republic, Estonia, Slovakia, and Hungary; and increased by more than 50% in Kyrgyzstan, Georgia, and Armenia.[1] Third, not only were there vastly different adjustments *between* countries, but also *within* countries. In Poland, for example, labor outflow was around 50% in some regions, while agricultural employment increased in other regions. Fourth, in many cases, these variations in adjustment did not contribute to a convergence of agricultural labor use, but rather to a divergence. The largest declines occurred in countries and regions where labor use and intensity were already relatively low (such as in Central Europe). Labor use increased where agriculture employment was relatively high (such as in Southeastern Europe or the Caucasus).[2]

By any standard or historical reference, these are remarkable changes. Understanding the drivers of these changes is important for their own sake. These dramatic changes resulted in large adjustments for the people affected

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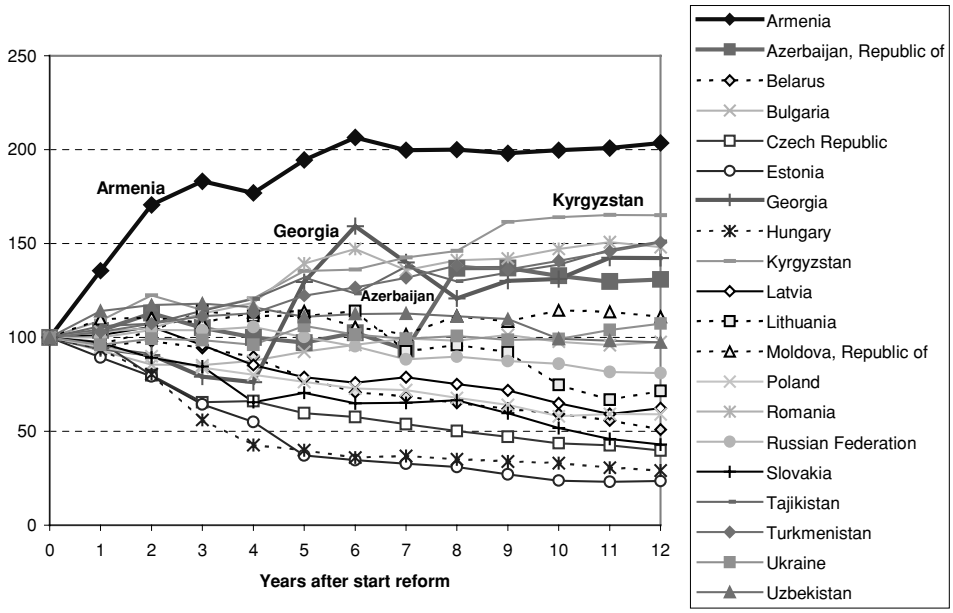
Figure 1. Changes in agricultural employment in transition countries



Source: ILO and national statistics

and therefore have important policy implications. It is also critical to understand why these changes are different from those in emerging or developing economies to derive general implications.

The objective of this paper is to offer an explanation for these arguably unprecedented developments. Our arguments are organized in three parts. The first reviews previous findings.[3] In earlier research, we have shown that several reforms affected these labor adjustments, including price liberalization and subsidy cuts, land reform and farm restructuring (Macours and Swinnen, 2000, 2002). Moreover, we showed that variations in adjustments are caused by interactions of differences in reforms and in initial conditions, both between countries (Swinnen, Dries, and Macours), and between regions (Dries and Swinnen). Furthermore, differences in human capital and rural market imperfections play an important role (Rizov and Swinnen).

The second part of the paper presents new insights into the role of migration in the labor adjustment processes. The third part discusses the interactions with rural poverty and draws implications.

Determinants of Agricultural Labor (Re)allocation

Price liberalization and the reduction of subsidies had two opposite effects on labor use. First, it caused a dramatic decline in the agricultural terms of trade in all but the poorest countries. This implied a strong reduction in the demand for agricultural labor in CEE. Second, the liberalization changed the relative factor

costs. In many cases, price liberalization caused prices for other inputs (especially capital inputs) to increase relative to wages. This caused a substitution of labor for other inputs. This substitution effect mitigated the reduction in input demand.

The general reforms both destroyed and created *jobs in other sectors*. These employment changes obviously affected alternative employment opportunities for farm workers. For example, when there is large unemployment, workers are unlikely to leave agriculture, even when farm incomes are low. However, evidence from within and across countries shows that agricultural labor often reacted only slowly to improvements in the general economy. The farm restructuring process, the characteristics of the rural labor force, and mobility costs between jobs help explain this phenomenon.

The reorganization of farms strongly affected labor adjustment in transition countries. First, the outflow of labor has been strongest in Czech Republic, Slovakia, Estonia, and Hungary where large-scale farms have remained important in agriculture. Privatized collective and state farms, with independent company management facing hard budgets, have shed a large number of workers beyond those that voluntarily left the farms for other employment. Second, an inflow or preservation of the labor force in agriculture coincided with the growth of household farming in countries like Armenia, Georgia, Albania, and Romania. These countries are characterized by relatively labor-intensive production processes. There, the break-up of large-scale collective and state farms led to higher gains in technical efficiency, with relatively small losses of scale economy, and substitution of relatively abundant labor for other inputs. Third, in countries with relatively land- and capital-intensive production systems but with continued soft budget constraints, such as Russia, Ukraine, and Kazakhstan during the first decade of transition, large-scale farms have remained important but have not laid off much labor. Households used mixed strategies by combining household plot farming (for labor-intensive production) with continued large-farm employment.

In countries with strong *regional differences* in initial technology, climatic conditions, or initial farm structures, such as Kazakhstan and Poland, regional variation in farm restructuring and labor adjustment patterns are consistent with the cross-country evidence. The regional variations are sometimes remarkably large.

Variations in *social security* and *rural service delivery* systems reinforced these differences in adjustment patterns. First, in (relatively) high-income transition countries, such as in Central Europe, more extensive social security systems provide higher unemployment benefits and pensions for laid off workers. Second, in low-income transition countries with poor social security and very low pensions, household farming contributes to both food and social security. Third, the outflow of labor was constrained in countries where large farms continued to be the main institutional provider of rural social services—and, in some cases, of input and output marketing. Employment on these farms not only provided wage benefits but, sometimes more importantly, access to social services and market channels for rural households.

Inadequate *human capital* has also severely constrained intersectoral mobility. In many transition countries, people employed in farming are, on average, old

and poorly educated, even in recent years. For example, in Poland, 43% of agricultural workers have an elementary education or less (compared to only 16% in construction, 13% in industry, and 8% in services). Empirically, the level of education is strongly correlated with the likelihood of finding a job in the service sector or in industry, of business start-ups, and of nonfarm economic activity in rural areas.

Integration of rural factor markets in the economy facilitates the outflow of labor by stimulating off-farm rural activities, reducing labor market constraints, and lowering costs for people to move to other sectors and regions. The *integration of capital markets* increases access to (much-needed) capital for farms. This simultaneously increases the demand for farm labor because of improved productivity, and reduces the demand as the price of capital falls vis-à-vis labor costs, and by stimulating the creation of nonfarm rural employment. *Integration of labor markets* typically stimulates the outflow of labor from agriculture. However, spatial considerations affect mobility costs. In countries where rural areas were mainly organized around collective and state farms and where nonfarm employment is concentrated in cities, finding off-farm employment requires households to relocate. In other countries where off-farm employment is available in rural areas, job reallocation may be possible without moving out of the area. The lack of housing in urban areas or other factors, such as the existence of a farm economy based on barter rather than cash, can be important constraints on rural labor mobility.

The Role of Migration

Changes in agricultural employment have coincided with sometimes dramatic migration flows between urban and rural areas within a country, and between countries. The rural population has increased as a share of total population in Tajikistan, Kyrgyz Republic, Uzbekistan, Moldova, Azerbaijan, Kazakhstan, Latvia, Slovenia, and Estonia. Urban to rural migration flows explain at least part of this increase. Such migration flows stand in sharp contrast to the direction of most historical and current migration flows in developing countries (Taylor and Martin). At the same time, international migration from rural areas has been very significant in several Balkan, Caucasian, and Central Asian countries. The most dramatic case is Albania where around one-third of the male working population migrated abroad in the past decade (Germenji). Anecdotal evidence also suggests large temporary migration within the FSU, often for seasonal agricultural or construction work in Russia.

Household coping strategies in response to negative transition shocks, in combination with new access to land resulting from land reforms, resulted in urban to rural migration. With deteriorating urban economic conditions and food insecurity, the best option available for many unemployed urban households was to move to the rural areas. This was particularly the case for older households, many of whom fell back to (semi-) subsistence farming on land parcels newly acquired through the restitution process (in CEE). Even in some of the poorer countries where land was distributed to rural population (e.g., in Central Asia and the Caucasus), some urban residents opted for farming on land from rural family members. This was especially important where people

suffered from violent conflicts or natural disasters (Armenia, Georgia, and Tajikistan).

In many countries, these migration flows coincided with migration out of the rural areas by the younger and more educated population, either to urban areas, or abroad. The combination of these opposite migration flows caused growing differences in demographic characteristics of the rural versus urban population. Education levels are particularly low in rural areas in the CEE countries. More striking, the share of elderly is considerably higher in rural than in urban areas in the European CIS (Belarus, Moldova, Russia, and Ukraine) and in Bulgaria, Lithuania, and Romania. In Belarus, Bulgaria, and Romania around 25% of the rural population is older than sixty-five (a much higher share than in urban areas). For households, the presence of a pensioner might decrease poverty risks (because of the pension income), but the unfavorable age distribution has the opposite effect on rural employment and growth.

The outflow of human capital has severely reduced the quality of rural services. Health and education services in countries like Albania and Tajikistan have deteriorated since high-quality teachers and health service providers left isolated rural areas. These developments reinforce the human capital disadvantage of rural areas in the long run.

In the short run however, the negative human capital effects of emigration are offset, at least in some countries, by large private transfers due to international migration. This is most striking in Albania, where remittances are the most important source of income for many rural households, and an important source of rural credit (Germenji).

International migration, often by young male adults in the households, is an important income diversification strategy in some countries, and contributes to mitigating rural poverty. As a result, a high share of households in some rural areas are female-headed (e.g., more than 50% in Belarus). This explains the otherwise puzzling findings that female-headed households in many transition countries are less likely to be poor. However, private transfers do not always lead to efficient use of funds for farming or rural growth, as Germenji finds in Albania.

Implications for Rural Poverty

The labor adjustments have led to very distinct patterns, with different poverty implications. First, the flow of labor into agriculture was the strongest in poor and labor-intensive countries with a large share of pre-reform employment in agriculture. This path has strong commonalities with the Chinese path of agrarian reform, growth, and poverty reduction.[4] Distribution of land to rural households in physical plots was followed by a strong fragmentation of farm structures, inducing a rapid shift from large-scale collective farms to household farms. This land reform process did not emerge in all countries at the start of transition; often it was initially opposed by governments that favored large-scale farms. It often took a crisis, as in China, to trigger a radical policy change. The timing of the land-individualization process coincided with inflows and absorption of labor into agriculture. This is most clearly demonstrated by developments in Azerbaijan, Armenia, and Georgia,

where a strong and sudden increase of agricultural labor occurred during the period of intensive land distribution (figure 1). Direct access to land contributed to a shift towards labor-intensive crop and livestock production. Rapid and strong yield gains in labor-intensive farming mitigated negative income shocks and reduced poverty. In contrast to other transition (and developing) countries, rural poverty is close to urban poverty and in fact, often lower.

Second, the outflow of labor was strongest in countries such as the Czech Republic, Slovakia, Estonia, and Hungary where large-scale farms remained important in agriculture. Large-scale privatized farms laid off surplus workers who either found jobs elsewhere, became unemployed, or retired. Initial productivity growth came mainly from gains in large farm labor productivity. These countries had relatively good social benefits and pensions, and few people employed in agriculture. Safety nets were in place to mitigate the welfare effects of these labor outflows, and rural poverty remained low.

Third, rural households in poorer Eastern European countries (such as Bulgaria, Romania, Latvia, and Lithuania) had lower unemployment and pension payments than in the richer central European countries. As in the Caucasus and Central Asia, food and social security considerations played an important role in households' labor allocations. Workers on former collective and state farms who lost employment fell back to individual farming to complement their income. As a consequence, few people left farming. In addition, there was an inflow of urban households in farming, because of negative income shocks in urban areas and the restitution of land to urban households. However, with relatively capital-intensive agricultural production systems, productivity gains from shifting to small farms were smaller than in poor, labor-intensive, agricultural systems, while the costs in terms of losses of scale economies and technology disruptions were larger. With limited access to credit, inputs, and technology and few off-farm employment opportunities, many rural households faced large constraints limiting growth or investments. The problems were further complicated as land restitution concentrated land ownership in older households. Rural–urban poverty differences in these countries are very high. Other "quality of life measures" also show a bleak picture for the rural areas. Only recently, labor flows from agriculture have started in these countries.

The drastic, rapid and diverse changes in labor allocation during transition suggest that rural–urban poverty differences are not necessarily an indication of the lack of mobility, but might rather reflect households' reactions to heterogeneous opportunities. Increased access to land in countries with labor-intensive agricultural production induced urban-to-rural migration and helped mitigate the effects of negative economic shocks on poverty. As such, the unique natural experiment of transition offers interesting insights into the potential effect of technology and access to land on labor allocations between rural and urban areas, and in the implications for migration, poverty, and vulnerability.

Endnotes

[1]These diverging evolutions are especially remarkable because other input adjustments have been relatively common across transition countries (Rozelle and Swinnen).

[2]Agriculture and rural employment was relatively high in all countries. Even now, all have at least 25% of the population in rural areas, and more than 50% in some countries. The employment share of agriculture varies from 5% in high-income countries (e.g., Slovenia and Czech Rep.) to more than 40% in Romania, Albania, Georgia, and Moldova.

[3]The initial transition literature pointed in two directions. One group of studies argued that labor was even more inefficiently (over) allocated in agriculture than in other sectors (e.g., Brada), which implied an outflow of labor from agriculture with liberalization. Other studies, focusing on the transition process itself, argued that agriculture played a buffer role during transition by absorbing labor laid off in other sectors (e.g., Seeth et al.). Both arguments seem to have been right—or not at all, depending on the way one looks at it.

[4]The paths are not identical since the Chinese land reforms only distributed use rights, and not ownership rights on land. Moreover, the Chinese reforms coincided with major increases in agricultural terms of trade as the government reduced taxation of agriculture.

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